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LECTURE ON THE SPINAL OR ACCESSORY NERVE OF WILLIS.

BY CLAUDE BERNARD.

Translated for the Louisville Monthly Medical News, by JAMES S. MOREL, M.D., Savannah, Georgia.

SUMMARY—*Functions of the Spinal Nerve—Mode of Destroying the Spinal in Living Animals—Complete Oblation of both Spinals—Discussion and Conclusion of the Experiments—Mechanism of the Oblation of the Voice—Of the Difficulty in Deglutition Consequent to Destruction of the Spinals—Uses of the External Branch of the Spinal.*

GENTLEMEN: We have already told you that the mode, by section, which is generally employed to determine the uses of nerves, cannot be applied to the spinals. The dangers attending this operation have induced us to abandon it, and to substitute in its place another method of destroying them—this is by plucking them entirely away with their roots: this is a more simple mode, and allows the animals to live. Each of these methods merits our attention, as well to estimate the value of the results which it furnishes, as to present them to such as may wish to repeat the experiments for themselves.

Bischoff's Method.—The operation which concluded the experiments of this author, as we have seen, was to lay bare and divide the fibrous membrane which connects the posterior portion of the occiput to the atlas. By this means he reached the rachidian cavity, and distinctly brought into view the two spinals which are situated upon the sides of the medulla oblongata. But, as Bischoff well remarks, this opening, although sufficient for the destruction of the inferior origins

But besides the operations I have reported, I have never been able to prolong the life of the animals beyond a few hours, and it is difficult to understand how a cure could have been effected without involving serious alterations in the medulla oblongata and the pneumogastric nerve, which would have prevented us from ascertaining whether the phenomena ultimately observed, depended upon the ablation of the spinals, or upon an alteration in the pneumogastric. In a word, to preserve the animals so as to ascertain whether the spinal acts upon any other organ than the larynx, it was absolutely necessary to abandon this mode of experimenting, and resort to complete extraction of the spinal, without opening the cranial cavity. I make this experiment by seizing the spinal as it leaves the posterior foramen lacerum, and tearing it away, thus destroying all of its inter-rachidian origins. The following is the method I pursue: By an incision, extending from the mastoid process to a little below the transverse process of the atlas, I lay bare the external branch of the spinal just where it escapes from behind the sterno mastoid muscle. With a small hook, held by an assistant, the superior part of the sterno mastoid muscle is lifted up, the external branch of the spinal is carefully dissected and used as a guide to the posterior foramen lacerum. Having reached this point, some precaution is necessary to prevent the lesion of the vessels and neighboring nerves. When we have got beyond the sterno mastoid muscle, it is necessary to follow the spinal which lies between its fasciæ, and reaching the anterior portion of the vertebral columns, it ascends and goes directly to the posterior foramen lacerum, the hypoglossal is then brought into view as it crosses the pneumogastric nerve. It is exactly at this point that the internal anastomotic branch l. (fig. 13) is detached from the spinal to go to the trunk of the pneumogastric. With forceps made for the purpose, we seize this branch at the same time with the external branch of the spinal, then make a firm and continued traction on the whole of the spinal nerve, pulling steadily and without jerking, so that all of the origins of the nerve are acted upon; a slight snapping is perceived, the nerve gives way, and a long cervical nervous filament is extracted, which terminates in an extremely slender thread, from which are detached delicate radicles, when

the nerve is placed in water. This is nothing else than the whole of the inter-rachidian portion of the spinal nerve. As may be observed, the object of operating in this way is to extract the whole of the spinal, to destroy the origins which constitute both its internal and external branches.

But if it should be desired, either the medullary or the bulbar origins could be separated. Indeed, if the internal branch only was seized by the forceps and tractions made upon it, the bulbar filaments alone would be extracted. This operation is very difficult upon small animals—cat, or rabbit; it succeeds better on the goat and horse. If, on the other hand, the external branch of the spinal be seized, which is an easy operation, the result will be oblation of the medullary origins of the external branch.

To lay bare the external branch of the spinal and the posterior auricular branch of the cervical plexus in the dog, it will be necessary to take as our guide the projection of the transverse process of the axis, and make a longitudinal incision a little below it: then, on the posterior edge of the sterno mastoid, after having divided the cellular tissue, we discover its auricular branch at its point of emergence. The spinal is found immediately behind it, descending obliquely below and backwards under the trapezius; ascending again, the spinal can be traced as it crosses the sterno mastoid.

It may be remarked that this kind of dedoublement of the experimental process proves, as I have already demonstrated, that the medullary origins of the spinal, which constitute the external branch of this nerve, are simply coupled by loose cellular tissue to bulbar origins in the posterior foramen lacerum; for if they were intimately united, interlaced and mixed, it would be impossible to take them away separately. I have sometimes observed, however, that in old animals (the cat and rabbit) the thickness of the cellular tissue is much greater between these two nerves; so it may happen, in making traction only on the external branch of the spinal, that the whole or a part of the internal branch was brought away.

According to the preceding description, it is seen that this way of destroying the spinal is not more difficult than Bischoff's method; but that it is more accurate and exempt from great mutilations, and for these reasons should be preferred.

With a little skill, it is also effected with a degree of certainty. Before using this method upon the living, I have scrupulously studied it upon dead animals, in which I had previously exposed the inter-rachidian origins of the spinal. I have thus been able to assure myself directly, that all of the filaments of the spinal are always plucked up and drawn out in the operation, while those of the vagi are spared.

Besides, autopsy of the head of the animals will furnish a criterion by clearly showing all of the roots which may have been destroyed. The forceps I use resemble those for making torsion of the arteries, only the blades instead of being cutting are rounded so as to seize the nerve firmly without cutting its neurilema.

I have performed the experiment on dogs, cats, rabbits and goats, but on the dog I almost always fail; this is owing to the thickness of the cellular tissue which in this animal unites the neurilema with the periosteum of the bone which gives passage to the eighth pair. This particular circumstance causes this nerve to break ordinarily under the pressure of the forceps. This mode of extirpation is not a new one and peculiar to the spinal.; it is a new method of experimenting which I have applied to the facial hypoglossal, and to the cranial nerves in general. I repeat, that this method is very difficult when applied to the dog. I will add that, in general, I prefer young animals, and that cats are the best for this kind of experiment, because it is their nature to cry; no serious consequences follow this operation, for at the end of four or five days the wounds of the neck cicatrize, and the animals return to their normal state, less the spinals, which they no longer possess.

Thus, by my process, I have obtained the wished-for result; the spinals have been destroyed, and the pneumogastric preserved; and I have been enabled to observe new phenomena and all of the phases of functional disturbances which follow the ablation of nerves, the functions of which I wished to investigate.

First Experiment.—On the 25th October, 1842, I extirpated both spinals of a full grown and healthy male cat. The voice became hoarse after the extraction of only one of the spinals, and was suddenly abolished when both were extirpated.

The cat being set at liberty, I observed that the animal which, before the operation, was very noisy, slunk away into a corner, where he remained quiet for about an hour, making now and then an attempt at deglutition, but without trying to mew. When his tail was pinched to provoke a mew, he opened his paws, but only breathed short and interrupted inspirations. If the pain was prolonged, he tried to escape, sometimes uttering a hoarse and rapid rale. While at rest, respiration did not seem at all difficult, and it was only when the animal was forced to move, or run, that the respiration appeared quickly exhausted, when he appeared inclined to stop.

The next day the cat was entirely free from the pains and fright consequent to the operation; he became as gay and frolicsome as he was before, but made very feeble efforts to mew. When food was presented, before giving it to him, he would try to reach it, at the same time showing a disposition to utter, as cats usually do, the cry of desire; but the mewings were reduced, like those excited by the pain he had suffered, to an expiratory breath, but of short duration. If at this time a piece of meat was thrown to him, he pounced upon it with the utmost voracity; but his ardor was soon appeased, and, eating very slowly, he would stop and raise his head at every mouthful he swallowed. When the cat was rudely disturbed while eating, a cough, or kind of wheezing, was sometimes produced, as if occasioned by the intrusion of particles of food into the trachea. He partook of liquid food very slowly, and deglutition, although sensibly impeded, appeared to be easier in this diet than when he partook of solid food.

The next day nothing peculiar was observed. The slight difficulty in deglutition, although always appreciable, especially when the animal was roughly treated when eating, had become a little less apparent.

The respiratory, digestive and circulatory phenomena were not disturbed in the least. The animal being very poor at the time of the operation, became fat under the influence of nutritious diet. In a word, the cat remained, physiologically, almost in the same condition, and there was nothing abnormal about him except the complete extinction of voice.

The cat was very tame, and went in and out of the house as usual, when he was missed on the 28th of December, 1842, two months after the operation, and never returned, so that this experiment could not be completed by a post-mortem examination.

Second Experiment.—On the 12th of January, 1843, I extirpated both spinals from another full grown male cat. The result, as in the other case, was complete extinction of the voice, and phenomena as above cited.

On the 27th, fifteen days after the experiment, I killed the animal by an operation I have repeated before, and I ascertained in the first place, that both spinals had been extracted, and in the second, that the stomach and lungs presented not the least appearance of alteration.

Since the publication of these experiments, which are to be found in my first memoir, I have operated in the same way upon a great many cats, and always with the same results. Many of these animals have lived for months—I have even known one to survive for two years; he belonged to a person who had sent him to me for the purpose of depriving him of his voice; his organic functions always preserved their integrity.

Third Experiment.—On 21st March, 1843, I extirpated both spinals of a large male surmulot. These animals, like cats, are very difficult to operate upon, because of their fierceness and the conical form of their musean, which prevents proper muzzling. I employ for this purpose a particular process, which consists in placing across the jaws and behind the canine teeth of the animal a small piece of wood, a pencil for example; a circular ligature is passed behind this kind of bit, which is moderately tightened. The animal confined in this way can not disengage himself, because the ligature prevents the pencil from slipping, and the teeth retain the crayon in its place. Besides, there is another advantage: by keeping the jaws open, it neither prevents the animal. from crying, nor from respiring freely. When the surmulot was irritated before the operation, his cries were loud and sharp, peculiar to animals of this species. Soon after the extirpation of the spinals, aphonia occurred, and the sharp cries were replaced by very short grunts. When set at liberty, the animal some-

times made efforts at deglutition, coiled himself in a corner of his cage and seemed unwilling to move.

The next day bread was given him, deglutition appeared difficult, and when he ate very rapidly the food evidently passed into the trachea, and judging from his sneezing, and a sort of hoarse cough which occurred, the respiration was also disturbed. After these accidents had passed away, he again commenced to eat, but more slowly than at first; he chewed for a long time, and stopped masticating at the moment deglutition was accomplished. The same phenomena continued for some days after. While reposing, the animal was calm, respired normally, and swallowed very well, but deglutition was very easily disturbed if he was forced to run and to breathe quickly at the time he was eating.

The 16th March, the fifth day after the operation, the animal was killed—the spinals had been completely removed. The lungs were healthy, except a portion of the superior lobe of the right lung, which presented a remarkable appearance: Externally, small white masses of equal volume were seen disseminated in this portion of the pulmonary tissue. By cautiously opening the air tubes of the lung, I found small pieces of mashed bread, which obstructed the larger bronchial tubes, and it was easy to perceive that these little white spots were formed of the same substance. The stomach was not altered, and contained half-digested food.

Fourth Experiment.—I took away the spinals of a great many young and full grown rabbits. As the result of all of these experiments resemble each other, I will limit myself by reporting one only.

On the 18th of January, 1843, the extirpation of a single spinal from a full grown rabbit brought on hoarseness of the voice, which became extinct after the extraction of both nerves; if at this time the tail of the animal was pinched, he would utter a clear and short respiratory whistle, interrupted by hoarse and noisy inspirations. Sometimes the expiration was aphonic, and only the inspiratory rhonchus was heard. While at rest, the animal breathed normally, and was very lively; but if he was forced to run, he appeared quickly stifled, respiration became hurried, and was sometimes roaring; deglutition was performed with difficulty while the animal ate, and

if at this time it was made to move, a cough was induced, as if foreign substances had passed into the respiratory passages.

The same phenomena continued for days; he breathed freely, and did not suffer at all while at rest; when allowed to eat at his leisure, deglutition, although rather difficult, was easy enough, but when suddenly disturbed, respiration at once became difficult.

On the 29th, eleven days after the experiment, the animal was killed. Autopsy—The two spinals were entirely destroyed; the lungs were free from ecchymosis and alterations to a great extent, presenting slight redness and hepatization in the superior lobes; the pulmonary tissue at this point appeared marbled upon being cut, in consequence of the green portions, which consisted of the chewed up herb, enclosed in the bronchial tubes; the very green color of the herb contained in the large bronchia showed that their introduction was very recent, while that contained in the small bronchia had partially lost its color, and had evidently been there for several days; the stomach, which was healthy, contained a large quantity of food.

The number of rabbits from which I have extracted the two spinals was considerable. They did well after the operation, except in the cases where peripneumonia followed the introduction of the herb into the bronchia.

This first series of experiments proves that the functional modifications which occur after complete extirpation of both spinals are particularly manifested on the vocal and respiratory organs. We observe, besides, that these phenomena are particularly manifested in the functions of relation:

1. In the active animal, there is aphonia; a certain difficulty of deglutition; shortness in expiration when the animal attempts to cry; difficulty of breathing in violent movements; and sometimes irregularity in walking, etc.

2. In the animal while at rest, all of the organic functions, respiration, digestion and the circulation are, on the contrary, performed with the greatest regularity, and it is impossible to observe in this respect that they have been deprived of any nervous influence whatever.

It must be noted, also, that the totality of these phenomena which characterizes paralyses of the spinal nerves, is distin-

guished in many points from the paralysis which follows the section of the two vagi. This difference will be better understood by referring to the following table:

PHENOMENA PECULIAR TO PARALYSIS OF BOTH SPINALS.	PHENOMENA PECULIAR TO PARALYSIS OF BOTH VAGI.
1. The voice becomes extinct.	1. The voice is abolished.
2. Respiration is not disturbed; the number of respirations are not changed.	2. Respiration is modified, and the number of inspirations always diminished.
3. There is no difference in the number of the pulsations of the heart and arteries.	3. The pulsations of the heart are accelerated, and the arterial pulsations are considerably increased.
4. Gastric digestion is not deranged, and the secretions are normal.	4. Gastric digestion, as well as gastric secretions, are generally disturbed.
5. The animals always survive, and live to an indefinite period.	5. The animals always die, generally after three or four days.

The result of the foregoing comparison is, that there is but one character common to the paralysis of the spinals and that of the pneumogastrics, and that is the loss of the voice. In analysing the mechanism of this aphonia, we see that it is essentially different in the spinals from that of the vagi nerves.

This phenomenon is doubtless in consequence of a paralysis of the movement of the larynx. But a singular fact, and one which should arrest attention, is that the paralysis of the larynx which ensues after the section of the spinals, is altogether different from that ordinarily produced by the section of the pneumogastric or laryngeal nerves.

Indeed, on the cat that had lost his voice for five days after I extirpated the spinals, I exposed the glottis by making a vertical incision of the thyrohyoid membrane in such a way as to shun the laryngeal nerves; then seizing the epiglottis, by this opening, with hooked forceps, I drew the superior opening of the larynx forwards, and made the following observations: The glottis was dilated in its whole extent, and permitted the free entrance and exit of the air; the mucous coat of the larynx had preserved all of its sensibility, and when the interior of the larynx, or vocal cords, were touched, the lips of the glottis slightly approached each other; but this contracted movement was very limited, and no longer induced tension and approximation of the vocal cords. Then if the animal was worried, it showed a disposition to cry, and would expel the air suddenly from his lungs; but the vocal cords being no longer tense, and not approximating closely, could not be made to vibrate. Since the ablation of the spinals, the

column of air in passing produced only a very hoarse murmur instead of the natural voice of the animal. The vocal expiration was, in general, slightly prolonged and interrupted by sudden inspiratory movements, which sometimes induced a kind of grunting.

I have observed similar phenomena in the larynx of rabbits—that is to say: I have remarked, that after ablation of the spinals in these animals, as well as in cats, that the glottis which retained all of its sensibility continued dilated, and had lost the power of closing completely. In rabbits alone did I find entire paralysis of the crico-thyroid muscles after extirpation of the spinals; this allows the cartilages to separate, and the crico-thyroid membrane to project within the larynx; these changes give a very noisy character to the inspirations.

When the pneumogastric nerves or their laryngeal branches are divided, the changes effected in the larynx are altogether different. The voice is abolished, it is true, but at the same time, as every one knows, there is occlusion of the glottis, which, according to the age of the animal, occasions greater or less difficulty in the act of respiration so that we must conclude the following as the result of experiment:

1. That, after oblation of the spinals, aphonia co-exists with permanent dilatation of the glottis, with inability of approximating the vocal cords.

2. That, on the contrary, after section of the pneumogastric or laryngeal nerves, aphonia co-exists with occlusion and inability of separating the vocal cords.

These facts are rendered still more palpable by the following experiments, made upon a full grown animal:

If the superior opening of the larynx of a living cat be drawn outwards, so as to avoid the lesion of the laryngeal nerves, movements of contraction and dilatation of the glottis will be observed occurring in rapid succession whenever the animal makes an effort to cry or escape; but after a few minutes the animal gradually becomes calm and at last breathes easily. Then the respiratory glottis continues, so to say, permanently dilated, and the contractions and dilatations in the acts of inspiration and aspiration are exceedingly limited or scarcely appreciable, resembling those observed in the nostrils of animals when their respiration is undisturbed.

At this stage the larynx soon changes its action, and becomes the seat of new phenomena if the mucous coat of that organ be roughly pinched or punctured. The two extended vocal cords suddenly approach each other; at the contact a strong and prolonged expiration causes them to vibrate, and piercing cries are the result.

If, after ascertaining these facts, the spinals are extracted on one side, we will remark that the half of the corresponding glottis remains separated and nearly motionless, while that of the opposite side continues to move from and approach the median line. When the animal wants to cry, the column of air expelled from the lungs being freed from the half closed glottis, and circumscribed on one side by the extended vocal cords, and on the other by a relaxed vocal cord, produces only a harsh or hoarse sound instead of the clear tone peculiar to the cat. If the other spinal is extirpated, the opening of the glottis still exhibits slight contractions like those observed when the respiration was easy, but it has entirely lost the power of perfect closure. Notwithstanding the efforts to cry, induced by the pain inflicted, the animal is no longer able to render tense or approximate the relaxed separated vocal cords, and it produces only a very short expiratory murmur, then there is complete aphonia and the vocal movements are extinct. Respiration, however, continues to be carried on by the glottis.

To be convinced that it is the pneumogastric which maintains the separation of the lips of the glottis, and communicates to it the slight movements we have alluded to, it is only necessary to divide the recurrent nerves, when the opening of the larynx will become completely paralysed and constricted. The vocal cords, like floating valves, will mechanically come together during inspiration under the pressure of the external air, which tends to enter the larynx, and would be lifted up by the expired column of air. This action causes a difficulty of breathing which is analogous in its mechanism to what is observed in œdema of the glottis.

This experiment clearly demonstrates that the extirpation of the spinal nerves partially paralyses the larynx as the organ of the voice, but leaves it intact as the organ of respiration. Indeed, the gaping and dilated glottis can no longer be con-

tracted so as to produce voice, but it is very freely engaged in respiration.

The following experiments demonstrate the above fact more conclusively:

Comparative Destruction of the Laryngeal and Spinal Nerves of very young Animals.—It is important to make experiments upon very young animals for the following reasons:

We know that a section of the inferior laryngeal nerves paralyses all of the muscles of the larynx except the crico-thyroid, and causes extinction of the voice and occlusion of the glottis. This last circumstance always produces death by suffocation.

In old animals this is not the case, because in them there is a gaping opening behind the inter-arytenoid space, which admits the ingress and egress of air to and from the respiratory passages, notwithstanding the complete paralysis of the larynx; but in young animals this arrangement does not exist. The complete paralysis which takes place after section of the recurrent nerves, brings on death immediately by suffocation, as we will see in the further investigation of the pneumogastric nerve. From this it may be conceived, that to this peculiarity our experiments will leave us in no doubt; for if ablation of the spinals induces aphonia in young animals without producing death by suffocation, it will be natural to conclude that the destruction of this nerve has paralysed the larynx as an organ of voice, but has permitted it to continue its functions as a respiratory organ.

First Experiment.—I made a section of the inferior laryngeals of a little cat three weeks old. After the section of the right recurrent, the voice became hoarse and breathing difficult. After section of both recurrents, the cat died suddenly from suffocation.

Second Experiment.—I extracted both spinals from another little cat, of the same size as the other, as a comparison with the preceding experiment. The animal soon after lost his voice, but the respiration and circulation remained as free as ever. (Dilatation of the glottis continued, and respiration was performed after ablation of the spinals alone.) The 19th of May, twelve days after, this little cat was killed, and the autopsy proved that the spinals were entirely destroyed.

Third Experiment.—The 3rd of June, 1843, I extirpated both spinals from another cat about five weeks old. The voice was soon abolished; but the other functions, under the influence of the pneumogastrics, were performed as usual. On the 5th, two days after, I excised the two inferior laryngeal nerves of the same animal, which had lost its voice, but was in other respects in good condition. This cat soon died from suffocation, a proof that the extirpation of the spinals paralysed the larynx as a vocal organ; and that two days after, it was paralysed as an organ of respiration by the section of the laryngeal nerves.

All of the experiments heretofore repeated lead to the conclusion that the larynx possesses two orders of movements: one, presiding over the voice, which is paralysed by destroying the spinals; the other relates to respiration, which is paralysed by section of the pneumogastric, or their laryngeal branches.

So that we must admit that the pneumogastric possesses a motor power peculiar to itself, and independent of that of the spinal nerve. It is this special motor power of the pneumogastric which influences the circulatory digestive and respiratory organs, and allows these apparatuses to perform their organic functions, and the animals to survive after the voice has been abolished by complete extirpation of both spinals. It is also by this motor power, derived from the pneumogastric, that the larynx performs the function of an involuntary respiratory organ in very young animals, and prevents them from suffocating after ablation of the spinals, which always takes place after the section of the laryngeal nerves. However, if we prove, physiologically, that the vocal movements of the larynx are animated by filaments from the spinals, while those of respiration are under the influence of distinct motor filaments derived from the pneumogastrics; we ought, nevertheless, not to forget that it is utterly impossible to trace and isolate, anatomically, both orders of these nervous filaments.

In man, and most mammifers, before they reach the larynx, they mix into the trunk of the vagus, and are united and confounded with the laryngeal nerves. The inferior laryngeal, as demonstrated by physiology, is composed of filaments of the spinal and the pneumogastric, which give to the larynx a

double motor power that is necessary for it to accomplish the functions of respiration, which are involuntary and permanent; and the vocal functions, which are temporary and voluntary.

It is necessary, however, to add, that in certain animals, the double nervous distribution, which we spoke of in the larynx, is anatomically distinct. Thus, in the chimpanzee, Vrolik has shown that the internal branch of the spinal is not united to the trunk of the pneumogastric, but is distributed directly to the larynx; also, that in this animal there are separate laryngeal filaments, derived directly from the spinal.

To sum up, we will state our general conclusions as follows:

"Although respiration and phonation seem to be anatomically confounded in the larynx, because these two functions are effected in the same apparatus, they are not the less physiologically independent, because they are performed under nervous influences essentially distinct." But what then is the mechanism of the extinction of the voice after destruction of the spinals? By recollecting what are the physiological conditions of phonation, it will be understood that the voice can no longer be effected after the modifications that the destruction of the spinals induce in the larynx. Indeed, it is necessary for the production of the vocal sound, that there should be an active occlusion of the glottis, that is to say, tension and approximation of the vocal cords.

From our experiments, we have seen that, in animals deprived of their spinals, the vocal cords are relaxed and separated, and no longer possess the power of actively contracting. In this condition it is natural that the column of air expelled from the trachea should no longer produce sonorous vibrations, and that its egress from the gaping glottis should give rise only to an expiratory murmur; but the question to be solved is, as we have been conducted to the recognition of a motor, vocal, voluntary nervous influence for the larynx derived from the spinal, and an involuntary motor influence coming from the pneumogastric, whether we can not and ought not to admit an order of vocal muscles and an order of respiratory muscles of the larynx? Evidently not, for this conclusion would be, first, a useless, and secondly, an untenable distinction.

(To be continued.)

CORRESPONDENCE.

EXTIRPATION OF GLANDULA PAROTIDEA.

By Gerhard Paoli, M.D., of Chicago.

Dr. Deville, of this city, called a public meeting, and through the city papers invited all medical men to listen to a lecture to be delivered by himself upon the Parotid Gland. The lecture seemed to be particularly intended to confute Dr. Brainard, who published in his medical journal of December last a very interesting original communication on this subject, wherein he plainly proved that he had several times removed the parotid gland. Dr. Deville seems to doubt the statements of our distinguished surgeon, and indeed doubts that the operation ever has been performed by any one, and quoted authors who question the possibility of the operation, without quoting a single one who ever has performed it. He stated that in all the medical museums in Paris and London he never had seen a single specimen of extirpated parotid gland. He doubted, indeed, whether there was any disease of that organ except hygroma. As to the anatomical facts his lecture was interesting, but in his surgical statements he came in conflict with experience; and I shall here, from an altogether scientific point of view, present a few facts in regard to this operation, and the diseases of this important organ. As far as I know, there is no special treatise upon the parotid gland, and I have, therefore, collected the following facts, which prove beyond a doubt, that the extirpation has been made many times, and furthermore that the parotid is subject to disease as well as other glands. The particular character of the different kinds of tumors which appear in the region of the parotid are still very imperfectly understood; notwithstanding the researches of pathological anatomy, we are still very far from a clear understanding of the real seat and origin of them, of their diagnostic signs, their most rational treatment, or their more or less favorable prognosis, and it would be of great importance in practical medical science if we had more positive knowledge on these subjects.

I shall first, before attempting to prove that many distinguished surgeons have extirpated the parotid, briefly mention the diseases to which this organ is subject. To these belong

carcinoma, osteoides, enchondroma, induration, hypertrophy, sialisma, hydroma, aneurism, lymphatic, and many other tumors.

Carcinoma fibrosum produces a stonelike circumscribed swelling of less circumference than the gland, with uneven, knotted surface, is generally movable, grows slowly, and therefore may exist many years without causing the patient much trouble; sometimes it is very deeply seated and becomes spread out into the ear or throat. Carcinoma medullare appears very seldom and produces larger tumors which grow more rapidly. On their first appearance they are like small, hard, uneven knots, which afterwards become softer, as if divided in small portions, and often present a spurious fluctuation. It is particularly this kind of carcinoma which causes the disease to take deeper root, where it can grow and distribute itself in different directions. In the case of a patient who died with a tumor of this description, Berard found that the internal jugular vein participated in the degeneration, and that the diseased mass reached into the vein. It can easily be seen how great the difficulty and danger would have been in this case to have attempted extirpation. A subdivison of this disease Rokitansky calls cystocarcinoma, whose nature does not differ materially from the other kinds. Prof. Saren has removed a tumor of this kind from the parotid, and exhibited it in the Philatrien Medical Society.

Induration. This form may be the consequence of chronic inflammation of the parotid, but in some cases it occurs without any such previous inflammation. Sometimes hard circumscribed tumors are found in the parotid, which, without causing any pain, or in any way particularly troubling the patient, continue unchanged many years. Such may be fibrous bodies, dermoides, enchondroma, or osteoides, and all appear to proceed from the fibrous elements of the gland. We are hardly likely ever to arrive at any certain signs by which they can be distinguished till the anatomical knife, after operation, makes known to us their component parts. They are all considered of a mild nature, and can generally be easily removed without danger of revivification, with the exception of the osteoid, described by John Muller, which, according to Rokitansky, is nothing more than medullary sarcoma.

Hypertrophy. There are very few instances of tumors of the parotid of this nature. Sabatier, who calls them the "*de la parotide*," has seen them twice, Tenon and Berard each once. They are often congenital affections, and depend upon the greater development of the separate portions of the gland so that they appear in a considerable compass and form tumors more or less hanging. In some cases there was also a telangeiectasis or an increased vascularity of the glandular masses. In one of the cases mentioned by Sabatier, a man aged sixty had a large tumor on the side of the neck, with a constricted basis, so that it was easily moved in all directions, its insertion reaching from the zygomatic arch and the ear which was projected forcibly forward over the masseter muscle. It had existed fourteen years and grew very slowly in the beginning, but afterwards more rapidly. He removed it successfully with a ligature and compared the inner structure to that of chronic hypertrophy of the tonsils. Tenon saw a case of a child of one year, where the tumor was about the size of a man's fist. On the death of the child, which occurred soon after, the tumor was found to have been caused by a derangement of the parotid, which also was full of strangely developed arteries which proceeded from the external carotid. Berard saw a child two or three years of age, who had a similar tumor, having its seat in the region of the parotid. It was oblong, tolerably hard, of a bluish color when the child cried or exerted itself. The compass could be diminished by compression. All the physicians who saw it considered it a telangeiectasis. Berard was just about treating it as such, when the child died of another disease. It was then found that the tumor consisted of a hypertrophied parotid whose texture was unchanged, but granulations were interwoven with a quantity of strangely developed veins.

Sialisma. These tumors, which are also described under the name of abscesses, or tumores salivales, consist of a collection of thick saliva, contained in a closed sac in the parotid, but instances of these are so rare, that in the annals of medical science very few are recorded; they are the same for the parotid, as ranula for the sublingual gland. These tumors sometimes contain sand, or small calculi salivalis; they differ in size from a nut to a goose egg, and

even larger. Felix Plater describes such an one Lib. 3, p. 689. Keemer describes a similar tumor. (Journal fur Chirurgie Augenheikunde of Graeffe and Walter.)

Hygroma. Rokitansky. These also appear very seldom, and are distinguishable from Sialisma by their not containing saliva, but a thin, divers-colored fluid, clear as water, which is contained in a sac. Henry* observed such a tumor in a child of four years of age, which had suffered therefrom from its earliest years. It developed slowly without pain, together with a feeling of fluctuation; at the first attempt to remove it, six ounces of a clear fluid flowed out. Valker and Wutzer have described a similar case.

Aneurism. Tumors of this kind proceed from lesions of the external carotid, or its branches, or of neighboring arteries, as the vertebral; they may be of considerable circumference, and their diagnosis is sometimes attended with great difficulty, as they do not always pulsate, and under the form of a false aneurism may produce tolerably hard tumors contained in the parotid, and surrounded by its aponeuroses. They appear oftenest after lesion of the arteries consequent upon shot wounds, etc. Berard saw them in the upper part of the region around the parotis after arteriotomy. A remarkable tumor of this kind is described by Javil†. The patient, in consequence of a shot wound received in a duel, had a lesion of the external carotid and internal jugular vein, whereby these blood vessels were brought into internal communication, but the artery also opened in an aneurismatic sac of the size of a pigeon egg, which formed a considerably large tumor in the region of the parotid, so that there existed at the same time both varix aneurisma and aneurisma varicosum. Besides, Romagna‡, of Naples, has communicated a not less remarkable case, where a tumor in the parotid gland proceeded from an aneurism of the vertebral artery caused by a punctured wound under the ear. The projection, a false aneurism, formed a considerable sized tumor, which reached from the ear to the angle maxilla inferior, and from the edge of the sterno cleido mastoideus to the edge of the maxilla inferior.

*Bulletin d l'Academie.

†Gazette Medicale, p. 457. 1840.

‡Archives General de Medicin, 2d series, 5th volume, page 138.

The principal tumors in the parotid, whether they proceed frrom the degeneration of the gland itself, or of the lymphatic glands, have generally several similar qualities such as growing slowly in the beginning or remaining stationary a long time; and as they are frequently wedged in between the processus mastoideus and maxilla inferior, lift the ear, more or less upward, and thereby the lobulus of the ear sometimes almost disappears. When the tumors have reached a considerable size, they sometimes impede the motion of the maxilla, press together the ear channel, and affect the hearing, as well as compress the large blood vessels, thereby causing a feeling of giddiness in the head. They soon almost imperceptibly make their appearance in the form of little hard moveable knots in the region of the parotid. Preeger thus describes a case where a woman of thirty-three years of age suddenly, at night, felt an acute pain in the cheek, which reached down to her neck and was so severe that she could not raise her head without assistance; sometime after, she observed a little knot under her ear, which was tender to the touch, and then, after the lapse of ten years, it had grown to an immense size, which not only covered her cheek, but reached down to her breast parallel with the pharynx, which it pressed aside. Burns observed a similar tumor.

Extirpation. This operation, the most customary and certain relief for the greater part of the tumors which occur in this region, was the subject of much discussion and strife among surgeons at the close of the past, and beginning of the present century; but we now finally—partly by the aid of discoveries in pathological anatomy, and partly from the teachings of experience—seem to have arrived at some definite results. A number of older surgeons, such as Heister, Schaarshmidt, Schultet, Acrel, Siebald, the elder, Werdier, Sarangeat, Roonhuysen, and several others, have declared that they have extirpated the whole parotid, and give a number of observations, which conclusively prove the truth of their statements.

Notwithstanding all this, Burns and Richter, and afterwards Boyer, attempted to prove that these surgeons, when they believed they had extirpated the parotid, had deceived themselves. They attempted first to show that the tumors described

by them were not generally seated in the parotid but in the adjacent lymphatic glands, which pressed the parotid down in the cavity and atrophied it, and after their removal it seemed as if the whole parotid had been removed. Richter even went so far in condemnation of the operation, that he did not consider a surgeon warranted in performing such a hazardous operation. Still, many of the older surgeons have proven by their own observations, that some at least of the tumors in the parotid have been removed with complete success, and without danger of lesion of any consequence, even in many cases without the slightest difficulty, and that it can be done without removing the whole of the parotid, in which they have developed themselves.

So the possibility of total extirpation being performed has been established beyond a doubt, by many surgeons whose names occupy a prominent place in the annals of medicine, and in this connection, I will here mention some of these distinguished surgeons, viz: Beclard in 1823, Randolph, Lisfranc, Gensoul, Hendricks, Ollenrath, Klein, Ohle, Walter, Chelius, Prieger, Berenetts, Weinhald, Bealard, MacClellan, Dieffenbach, Heister, Wallman in 1828, in Vienna, Dupuytren, 1829, in Paris, Bendz in Copenhagen in 1838, Verdier, Mott, Gayrond, Boyer, Stedman, Lacoste, Larrey, Nægle, 1830, Brainard in Chicago, and many others. These all prove that the parotid can be removed even when the glands are degenerated, and in fact they recommend the operation as being absolutely necessary. That it can be done is much the more indisputably proven by careful examination immediately after the operation, when the cavity of the parotid region, blood vessels, nerves, and parts bordering on the cavity inside, may be seen without any remnants of the glands, partly also by consequent perfect paralysis of the face, and partly by post-mortem examination. At the same time experience teaches that degeneration of the parotid can thus take place when prolongations of the diseased mass have forced themselves in the deepest parts, for instance: to the bassilary process, or atlas, then the complete extirpation of the gland becomes impossible, still science may accomplish much under very difficult circumstances. Hendricks has shown, in a case where the tumor was very large,

and unusually firm, and sent prolongations into the deepest part, among blood vessels, nerves, muscles, etc., that one of these prolongations hung fast to the stem of the nervus vagus, and had to be separated by very careful dissection, the pharynx was seen entirely bared, contracting itself together under the constant desire to swallow, which distressed the patient. Under this troublesome operation, which lasted an hour and a quarter, several arteries were tied, but the lesion of the carotid was avoided.*

These questions may now be considered conclusively settled:

1. That tumors lying in the parotid have been successfully removed without the necessity of removing the whole gland.

2. That the whole parotid can be extirpated when circumstances require it, either when the whole gland is degenerated, or when a tumor, on account of its situation, cannot be removed without taking the parotid also. Practical talent and experience are what are most to be relied upon in such cases, but we may consider it a tolerably well established rule, that in every tumor which we have not been able to disperse, or where dispersion is not advisable, there is an indication for extirpation.

Neither the size of the tumor, nor its ulceration, nor the age of the patient, are any contraindications to the operation, for many surgeons have extirpated the largest tumors with complete success. Some have thought best not to operate on scrofulous subjects, or lymphatic tumors, because they consider scrofula a constitutional disease and that the operation would be of no use. In the meantime, Sidellet has undertaken a number of operations of this kind among soldiers, as also Velpeau and Warren, and experience seems to have taught them to consider these tumors in patients who have arrived at a certain age, more as local affections than constitutional diseases. Upon these grounds they removed others with equal success from other parts of the body, for instance, the groin, axilla, neck, etc. Still the operation must be considered as contraindicated when the tumor is very deep seated, or there are suspicions that it reaches very deep, and has a considerable prolongation, for instance, reaches forward in the fauces behind the tonsils.

That they are carcinomatous, ought not to deter us

*Braamberg Diss de exterpatione Gland, parotis et sub maxillaris, 1829.

from attempting their removal, as experience has shown by many observations that these tumors have been successfully removed without danger of their returning; melanosis is an exception to this, and must be considered as a noli me tangere.

Before we proceed to extirpation of deep-seated tumors, which often expose the parotid, the question should be well considered, whether we can insure ourselves against hemorrhage by ligature of the common carotid beforehand. This proposition was first made and executed by the English physician, Goodland*, while extirpating the whole parotid, and several have followed his example. It is not easy to say beforehand whether the tumor is formed by degeneration of the whole or a part of the parotid, which of course would have more or less effect upon the hemorrhage, as experience shows us that many tumors in the lymphatic glands can be removed without the least danger of producing lesion of the carotid. Also the situation of the artery is variable, sometimes perforating the gland's deepest part, sometimes lying in a cavity at its point, or the foremost edge, and as one position occurs quite as frequently as the other, it follows that even in extirpation of the whole parotid, it is not always necessary to cut the external carotid, which, for instance, Smidt, Lisfranc and Hendricks avoided, and MacClellan was even so fortunate as to loosen the whole artery out of the diseased mass in which it lay, and extirpated the whole gland without the necessity of tying it; furthermore, several surgeons state, that tying the common carotid has in several cases not only proved to be a difficult and dangerous operation, but its consequences have been injurious to some of the vital organs, particularly the brain, lungs, larynx, and the internal carotid, can, in this operation, almost always be avoided. Velpeau very justly observed, that this preliminary ligature ought, under all circumstances, to be confined to the external carotid, and besides assures us that he never has found it necessary to undertake any such ligature, although he has constantly performed this kind of operation, and in doing so often reached in to the very depths of the parotid cavity. For these reasons it is not only unnecessary to place a ligature upon the external carotid, but in many cases it would be connected with

*Medical Surgical Transactions, vol. i: p. 12, 1819.

great difficulties because the lower end of the tumor generally covers the artery. On this account it is sometimes difficult enough to place a ligature upon the common carotid, and we see, for instance, that Dr. Stedman occupied fifty-five minutes in doing it. In attempting to pass such a ligature, he happened to open the jugular vein, and thereby nearly lost his patient through the entrance of air into the vein.

Berard also considered this preliminary ligature quite unnecessary except in case of a large encephaloide, which tumors are sometimes very frail, and if torn under the operation might produce dangerous parenechymatose hemorrhage. Instead of a preliminary ligature, a reserve ligature (ligature d' attende) under the common carotid, has also been recommended as advisable under certain circumstances. Beclard, Roux, Lisfranc and Gensoul have made use of it. Langenbeck and Braamberg compress the artery during the operation with the finger.

All now seem agreed that these precautionary measures are unnecessary, and depend upon reliable assistants who, during the operation, can compress the primitive artery.

It is generally acknowledged that definite surgical rules are sometimes very difficult to establish. In such cases talent and skill only can guide the surgeon, and he is often obliged to create his own methods, and difficult as the operation seems, and to many it may appear an impossibility, still no one who is acquainted with the surgical annals of different countries can doubt the records of men whose only object has been to relieve suffering, and leave truthfully to posterity their experience.

Mr. Editor: As you had the kindness to publish in your last No. a report on Medical Education, I send you herewith another report made at the same time on legislation for the protection of the community against incompetency and recklessness of persons engaged in the practice of medicine, surgery, and the apothecary's art, by requiring a test examination of all persons hereafter entering on the practice of these arts. It is accompanied by a report of a select committee of the Indiana Legislature, to the facts, arguments and conclu-

sions of which I would call the special attention of your readers.

With reference to the plan of legislation proposed by the Chairman of the Committee on Legislation, it is proper to remark that it was offered as the outline of a comprehensive and rational system of legal enactment for the end proposed—without special regard to the practicability of at once accomplishing all of it—but with the belief that it should all be aimed at, and that with proper effort it might be ultimately attained.

It may not be out of place to add here, that in 1859 the Legislature of North Carolina passed a bill, now in force, providing for a board of seven examiners, to be chosen by the State Medical Society, for the examination and licensure of all persons proposing to enter the practice of medicine and surgery, and depriving all others of legal authority for the collection of fees. This, while admitting the principle of our Report on Legislation, imposes, in my judgment, an inadequate remedy for violation of the provisions of the law.

Should this paper call forth discussion, I may have something further to add after a while—now, merely pressing the attentive consideration of the subject on your readers.

Indianapolis, *May* 24, 1860. C. F.

REPORT ON LEGISLATION.

The Committee of the Indiana State Medical Society, appointed at the annual meeting in May, 1856, "to urge upon the next Legislature the enactment of such laws as may be requisite for the protection of the community from incompetency and recklessness on the part of practitioners of medicine and surgery, and the apothecary's art," would report as follows:

About the 1st of December, 1856, the Chairman of the Committee visited Indianapolis, to confer with the other members of the Committee, about the matter assigned them. The result was, that several hundred copies of the following Petition to the Legislature, and Circular to Physicians, were printed:

PETITION.

The undersigned, citizens of the State of Indiana, feeling assured that many persons, utterly incompetent, are recklessly engaged in the practice of medicine and surgery, and the

apothecary's art, in this State, to the great injury of the good people thereof, hereby respectfully ask the Legislature to take the matter into consideration, and pass such laws as may be requisite for the protection of the community in this regard.

December, 1856.

CIRCULAR.

Dear Sir: The undersigned, a Committee of the Indiana State Medical Society, to urge upon the next Legislature suitable legal enactments for the protection of the community from incompetency or recklessness in physicians, surgeons and apothecaries, respectfully ask your aid and co-operation, as follows:

1. Place the accompanying petitions in the hands of some efficient persons, physicians or not, as you may deem best, in different sections of your county, with the request that they will have them presented to all the voters in their several districts for signature, without delay.

2. Return the petitions by mail, with names of subscribers, to your Representatives at Indianapolis, on or before the Tuesday next following the meeting of the next Legislature.

3. Secure the presence of as many of the educated physicians of your county as practicable, at a meeting at J. W. Gordon's office, in Indianapolis, on the evening of Tuesday, the 13th of January, 1857, for conference in reference to the details of this subject.

CHARLES FISHBACK,
P. H. JAMESON,
G. W. MEARS. } *Committee.*

A copy of each was sent to every member of the Society whose address could be obtained, and to some regular practitioner in each and every county in the State. The Chairman of your Committee went to Indianapolis at the time appointed, and met a few friends of the cause. A special committee of each House of the Legislature had already been appointed, and to them the petitions, numerously signed, had been referred. Your committee had frequent conferences with members of the legislative committees, and two meetings with the committees of the two Houses, Hon. Wm. Grose, of Henry county, and Dr. Freeland, of Knox county, being their respective Chairmen. Those committees were large, and contained a number of medical men, among the most earnest and laborious of whom should be mentioned, Drs. Freeland, of the Senate, and Todd, of the House, who cordially aided your committee.

These conferences resulted in the development of two facts: 1. That a very general feeling prevails, both in and out of the profession, in favor of the expediency and necessity of some legislative action for the protection of the people in this

regard. And 2. That no positive legislation could be expected at that session, on account of preoccupancy of the minds and the time of the people's representatives with more engrossing and exciting topics of discussion and action.

Your committee was less anxious for completed legislation at this time, than for a consideration of the subject, by the special committee of the Legislature, such as would lay the foundation for its discussion, both in and out of the profession—with a view to the development of a matured and correct public sentiment, professional and non-professional, before the meeting of another Legislature. Your committee was therefore entirely satisfied with the decision of the Legislative Committee—made, indeed, in accordance with the wishes and at the suggestion of your committee—to present a report, arguing, "That it is not merely expedient, but *obligatory*, under our Constitution, to provide for the safety and well-being of the people in their limbs, their health, and their lives, against the ignorance of pretended physicians, surgeons, and apothecaries *by legislation;*" and to ask the printing, by legislative authority, of a large number of the Report for general circulation. A copy of it (1,200 were printed by the two Houses) is appended to and made part of this Report.

Neither your committee nor the legislative committee could agree upon the details of legislation for the attainment of the object in view. The chairman of your committee presented a plan, the general principles of which he regards as just, philosophical, and *ultimately* practicable, if adopted after mature consideration, as he believes it will be by most reflecting men who will give it their full attention. It is appended hereto, and made part of this Report. The bill accompanying the Report of the Legislative Committee, and which was approved by a majority of your committee, differs essentially from the plan named, and a copy of it will be appended hereto, if it can be procured. Your committee regret that it was not printed with the Legislative Report.

Your committee would respectfully suggest, that the Society adopt such measures as in its wisdom may seem best, to secure thorough consideration and discussion of the whole subject, by the members of the profession all over the State, and especially before the people. Your committee are fully persuaded that much of the necessity—confessedly urgent—for legislative action in this behalf, grows out of a failure, to a greater or less extent, in past time, on the part of members of the profession, individually, to endeavor to enlighten the public mind respecting the mutual relations and duties of medical men, real and pretended, and society at large; and, the best means of differential diagnosis of the two classes, by the

public; and, also, to cultivate more highly than is generally done, *esprit du corps* of the most elevated order—one having reference to the *profession*, *as such*, and not *as a trade—nor to themselves as tradesmen.*

RFPORT OF SPECIAL COMMITTEE OF INDIANA LEGISLATURE.

In the House of Representatives of the Indiana Legislature, Feb. 27, 1857, "Mr. Grose, from the select committee on the practice of medicine and surgery, made the following report:

Mr. Speaker: The select committee to whom was referred the many petitions, numerously signed, from various parts of the State, praying for the protection of the community, by legislation, against the ignorance, incompetency, and recklessness of physicians, surgeons, and apothecaries, having maturely considered the subject, beg leave to report, as follows:

They suppose it will be very generally conceded that no other interests relating to the present life, can claim greater importance than those connected with health, whether considered in relation to individuals or communities; and whether the happiness, or the pecuniary interests of either the individual or community, are regarded.

Infirm health, or distortion, or impairment of limbs, not only entails positive evil upon the individual possessor thereof, and his immediate family—as every one well knows—but also diminishes his productive energies, consumes in his case the time and strength of his family and friends, and absorbs in expenditure for medical and surgical aid, medicines, etc., much of the actual products of his own and his family's diminished energies; but, in addition to all this, contributes largely to fill our alms houses, prisons, and institutions for the deaf, dumb, blind, and the insane; thus at once lessening the revenue of the State, which is derived from and proportioned to the actively engaged productive energies of all the individuals constituting the community, and increasing the expenditures of the State in making provision for those thus rendered unable to provide for themselves. These positions need no demonstration, for they are patent to all observant and reflecting minds; but they may be illustrated by individual cases, by our county poor-houses, and hospital for the insane: e. g. G. H. and wife are persons of average physical power and industry. They commenced life poor in worldly goods, and a rapidly increasing family, with not more than an ordinary amount of sickness, has kept them so. The spring has come, H. has rented a farm, and has well prepared the ground and planted his corn. While ministering to the wants of a neighbor, of the nature of whose illness he is not aware, and misled by an ignorant doctor, he contracts small-pox, and before he

is aware of it, has communicated it to his children. Being himself the first attacked, and having the disease in a mild form, through the influence of vaccination in early life, he does not become aware of its true nature until shown in his unprotected (by vaccination) family. Their cases occurring successively, require his constant care, until the season for cultivating his crop is passed; and, while he has rent to pay, he has no crop with which to pay it, or to sustain his family until another is made. This is no fictitious case, for it has actually occurred within thirty miles of this capital in the past year. Every entrance to the Insane Hospital is the result of disease or injury; and so, also, is almost every admission to our poor-houses.

Equally palpable and undeniable is the proposition, that to qualify any man for performing beneficially to the community the offices of physicians, surgeons, and apothecaries, the possession of much and varied knowledged specially pertaining to these callings, is indispensably requisite. The blacksmith must serve a considerable apprenticeship before he can properly shoe a horse; the engineer a more protracted one, before he is allowed to run a train over our railroads; and the falls and river pilots must receive license to practice their respective callings, from those who are qualified to judge of their fitness. By our Statutes, no one can teach in our common schools, unless he has first been examined by an officer appointed for that purpose, and received from him a certificate of qualification; and the minimum of such qualification—"a knowledge of orthography, reading, writing, arithmetic, and English grammar"—is fixed by the Statutes; nor is this minimum too great by any means.

Now let us glance at some of the branches of knowledge indispensably necessary for the practice of medicine, surgery, and the apothecary's art, in such a manner as will promote the good of community—in addition to any measure of general classical and scientific knowledge that is attainable.

1. Anatomy, or the number, shape, situation, structure, and connection of all parts or organs of our frame, in which are more than two hundred bones, and four hundred muscles, besides nerves, blood-vessels, glands, etc., almost innumerable—and of all these, in both healthy and diseased states.

2. Physiology, or the healthy action of all this multitude of organs, not only singly, but combined as they are in the living body.

3. Pathology, or the diseased action of all these organs in the same relation.

4. Materia Medica, Chemistry, and Pharmacy, or the immense number of remedies, animal, vegetable, and mineral—

their physical, medicinal, and toxicological properties—modes of preparation, use, and effects upon the organism.

5. Practical Medicine, including the detection of diseased structures and functions, from the plainest to the most hidden and intricate, and the practical application of the principles and facts supplied by the other branches.

6. Surgical Anatomy, and the principles and practice of Operative Surgery.

7. The diseases peculiar to women and children, with the best means for their relief.

All this, and much more knowledge, must be familiar to the practitioner of the healing art, to prevent him from often doing more harm than good; and the wisest is often perplexed, and not unfrequently defeated in his most diligent and faithful efforts to discover and correct disordered actions of the human frame, so "fearfully and wonderfully made;" while the apothecary should be perfectly familiar with Chemistry, Materia Medica, and Pharmacy, in order to avoid mistake in putting up medicines, which may be, and frequently are, fatal to the most valuable lives.

If the masses are incompetent, as is confessed by the Statute, to judge of the qualifications of the candidate for common school teacher, who is to instruct their children in spelling, reading, writing, and arithmetic, how much more incompetent must they be, to judge of the qualifications of the candidate for the practice of a profession requiring vastly more extended and varied attainments!

Go through the country and inquire of every family that has been cursed with incompetent medical men, and you will find that most of them have spent years in ascertaining the fact, ultimately learned in the hard and costly school of experience, if the ignorance of pretended doctors, who really knew little, if any more, about the science of medicine, than themselves. Add to this fact the numerous arts resorted to by these ignorant pretenders, to conceal their ignorance, and to make a show of extensive learning, and it will not excite wonder that it so often occurs that the most grossly ignorant have the reputation of great profundity.

Many persons do engage in the practice of Medicine, Surgery, and the Apothecary's art, who are wofully ignorant of most or all of those branches of science, a knowledge of which has been shown to be essential to a beneficial pursuit of the profession. This is the uniform testimony of medical men throughout the State, without a solitary exception; and also of most non-professional men of general intelligence.

From the foregoing premises, we briefly recapitulate:

1. The vast importance to the community, of incompetency in medical men.

2. The extensive range of knowledge requisite to make them competent.

3. The impossibility of the masses estimating, correctly, the qualifications of candidates for practice.

4. The fact that many incompetent men do, to the great injury of the people and the State, practice these professions, your committee are forced to the conclusion that it is not merely expedient, but *obligatory*, under our Constitution to provide for the safety and well-being of the people, in their limbs, their health, and their lives, against the ignorance of pretended physicians, surgeons, and apothecaries, by legislation.

What that legislation should be, has appeared to your committee a question of much more difficulty. And while they can not declare so positively on this point as the other, they nevertheless have strong confidence that good will result from the following enactments, which they recommend:

1. That all persons hereafter engaging in the practice of Medicine and Surgery, should first procure a certificate of qualification from the Board of Medical Examiners, in this act provided for.

2. All Apothecaries shall procure, before commencing business, a certificate of qualification from the Examiners on Chemistry, Materia Medica, and Pharmacy.

Your committee, in consideration of the above submitted reasons, have reported the accompanying bill, and recommend its passage:

PLAN OF LEGISLATION

Proposed by the Chairman of the Committee to the Legislative Committee for the Protection of Community against the Incompetency and Recklessness of Practitioners of Medicine, Surgery, and the Apothecary's Art.

1. Create, by Statute, a Board of Examiners, seven in number, to be selected by the State Medical Society, from among eminent medical men, not residents of the State. The Board to meet once or twice annually at the capital, at stated times, for the public oral examination of all future candidates for the practice of Medicine, Surgery, and of the Apothecary's art; one on Anatomy; one on Physiology, and Medical Jurisprudence; one on Pathology; one on Materia Medica, Pharmacy and Chemistry; one on Practical Medicine, including diagnosis; one on Surgical Anatomy, and the principles and practice of operative Surgery; and another on Parturition and the Diseases of Women and Children. Let the examinations be thorough, free from partiality or undue leniency; and let a very nearly unanimous judgment of the Board be requisite to authorize a certificate of qualification to issue from said

Board to the Secretary of State; who shall, thereupon, issue a license to practice Medicine, or Surgery, or the Apothecary's art, as the case may be. The candidate for the latter being examined only on Materia Medica, Pharmacy, and Toxicology.

2. Forbid, on penalty of fine and imprisonment, any one from hereafter commencing in this State the practice of these arts, without such examination, and license duly obtained.

3. Remunerate Examining Board from State treasury; providing the means therefor by a license fee of $20 to $50, as may be required; to be paid into the treasury by each candidate for examination.

4. Require the vendors of Patent and other Medicinal compounds to place on every package or parcel offered for sale, the names and proportions of each and every ingredient, in plain English.

5. Allow the dissection of the bodies of criminals and paupers, by medical men and their students.

La Grange, Ky., April 26, 1860.

Mr. Editor: As the subject of Diphtheria is agitating the medical mind at this time, it may not be improper in me to present a history of several cases of the so-called disease that. have come under my care, since January last, in this vicinity, I have attended about fifteen cases of "sore throat," and the same number of cases of an eruptive character, which, from their various modes of attack and progress, can not be placed in any particular family of such diseases as described by authors. In no two cases of the sore throat was there any uniform coincidence of symptoms. In some, the patients complained of soreness and pain inside of the throat; in some, outside; and in others, about the ears and head. In some there was swelling; in others, none. In some, deglutition was difficult (produced by different causes); in others, easy. In some, vomiting; in others, the stomach not in the least irritable. In some, bowels constipated; in some, loose; and in others, perfectly regular. In some, false membrane; in others, offensive discharge, etc., from mouth and nostrils. In some, fauces, etc., raw; and in others, presenting a dark purple appearance. In some, there was ulceration, etc. In fact, cases so different from one another as to lead to the belief that each was a disease *sui generis*. The same diversity of symptoms occurred in the cases marked by eruption. On the

first appearance, I thought I had (as the eruption indicated) a case of small pox, chicken pox, measles, scarlet fever, erysipelas, or erythema, etc., but in a few hours it would change and leave me in darkness.

The fact to which I wish to call attention is this: That in no one case were the two diseases combined; both prevailing at the same time, and, in some instances, in the same family. Those who had the eruption, had no sore throat; those who had the sore throat, had no eruption. The inference I draw from this is, that they are one and the same disease, prevailing under different modifications, of the true nature of which I am ignorant. The constitutional treatment in both diseases was nearly the same—aperients, astringents, cold lemonade, sponge bath, tonics, expectorants and sedatives—changing to meet each case. Locally, for throat, counter-irritants of volatile liniment and chloroform, turpentine and cod liver oil liniment, washes of chlorinated soda, and tannin and glycerine. Locally, for eruption, applications of glycerine and cod liver oil. I used no particular remedies except the local ones, in which I put great reliance. A majority of cases yielded very readily to treatment—a few, more troublesome, and two cases of the sore throat, quite bad, but finally got well under the treatment. F. H. GIBSON.

ABSTRACTS FROM FOREIGN JOURNALS.

FOUR CASES OF MENORRHAGIA TREATED BY INJECTION, OR SCRAPING OF THE UTERUS AND INJECTION COMBINED: WITH REMARKS ON THIS PLAN OF TREATMENT.

BY C. H. F. ROUTH, M.D.,

Physician to the Samaritan Free Hospital for Women and Children.

After premising that the following cases had been under treatment before admission into the hospital, but unsuccessfully, Dr. Routh proceeded to relate them:

Case 1.—A. B——, married, with a family, aged forty-six, with menorrhagic menstruation for upwards of a year, on two occasions so violent as to necessitate active treatment to save life. Examination per speculum revealed bunches of small polypi within the cervix. Uterus was dilated by a sponge tent, and the polypi scraped away by a gouge. No injection. Relief complete.

Case 2.—M. P——, married with a family, aged thirty-four. Menorrhagia succeeding defective menstruation. Actively treated. No polypi visible on examination, but softened and highly vascular uterine mucous membrane. Dilatation by sponge tent; scraping off the lining membrane, and injection of compound tincture of iodine. Some uterine pains followed, but cure complete.

Case 3.—M. L——, married; no children; menorrhagia of two years, following metritis. Treated in another hospital, but unsuccessfully. Hemorrhage excessive after introduction of sound. No polypi visible, except after dilatation, and simply removed, followed by injection of iodine. In a fortnight much improved; but catamenia still being too copious, operation repeated; uterus scraped; another polypus removed; uterus injected again with tincture of iodine. Cure complete.

Case 4.—E. R——, aged forty-five, married; face quite blanched; menorrhagia of eighteen months' duration. Examination revealed a blanched uterus, but no polypi till after dilatation. A polypoid mass was then removed by a gouge, and two again subsequently. Injection used as before. Cure complete.

In remarking on these four cases, samples of many more, the author stated the cases only went to prove the advantages of injection and scraping of the uterus, when combined—a mode of cure first introduced into London practice by his colleague, Dr. Savage. The use of both plans separately had been long known, but rarely practised, in England. The dangerous effects of injections were so much dreaded, that they were seldom employed. The author quoted several opinions, among others a very decided one from Dr. Simpson. He ventured to state that the danger was owing to the injection being used without providing means for *its free egress*, which could only be done by the previous employment of the sponge tent. The occurrence of peritonitis, he believed, was not due to the passage of fluid up the Fallopian tube, in proof of which the author adduced an experiment of the late Dr. Chiari, of Vienna, in which immediately after death in a female, the most powerful force applied by a syringe fastened to the os uteri failed to push the fluid in the Fallopian tubes. The peritonitis in these cases, he believes, was due to penetration of the injection through some ulcerated spot in the veins of the uterus, or simply to sympathy. This last view was exemplified by a case in which Dr. Routh merely injected warm water, which was retained for a time in an enlarged but indurated and retroverted uterus. This produced intense pain until rejected, which might have gone on to inflammation; *a fortiori* would this apply in a case where an astringent injec-

tion was used? In this case no sponge tent had been previously employed. Dr. Routh had used several fluids as injections—compound tincture of iodine, tincture of muriate of iron, strong solution of tannin, etc. In relation to the operation of scraping off the polypi, with or without the entire mucous membrane of the uterus, several instruments now in vogue were noticed: Dr. Simpson's, Sir C. Locock's, Recamier's, and two modifications of the author's, which he preferred as safer. There were two conditions of uterine mucous membrane he had observed in these cases of menorrhagia: the villous membrane without polypi, and that with small polypi, which last he looked upon as only hypertrophied villi, in proof of which he adduced microscopical examinations. The author then detailed the mode of dilatation by sponge tents, which dilatation was not to say complete until (having drawn down the uterus by a special hook provided for that purpose, which was shown) the index-finger could feel all the surface of the uterine mucous membrane to the fundus, and then any polypi could be felt and removed. The cure was completed by the injection, which set up a new and absorptive action in the uterus. If the scraper were too sharp, and allowed to cut too deep, peritonitis would probably occur. But a much more superficial scraping sufficed if the injections were also used. Hence one of the uses of the combination of these two plans. It had been shown by his friend, Dr. Savage, that the sponge tents alone would often suffice to set up this absorptive action, and thus diminish the volume of an enlarged uterus. So, also, by stimulating its contractile power, they favored the expulsion of any injection subsequently used. The author did not recommend this plan of treatment in every case, but in all those cases where, other derivative and general treatment having failed, the practitioner was called upon to do something more.

Dr. Graily Hewitt inquired whether Dr. Routh had any experience as to the effects of his operation on the procreative powers of the patient. Although he concurred in the propriety of removing any excrescences of the mucous membrane when such were present, he could not see how any such complete removal of the mucous membrane as that practised by the author could be necessary or even justifiable.

Dr. Tanner remarked that he considered it to be a matter of duty to make a few observations on the paper which had just been read. He felt this chiefly because for six years he had been connected with an institution of a similar kind to the one to which Dr. Routh was attached, and he had not met with cases which demanded the very active treatment recommended by that gentleman. It was, of course, no uncommon

circumstance to see women suffering from great congestion of the uterine mucous membrane, the result of chronic inflammation; but he believed that they could be cured by simple and safe measures, and especially by rest, and the administration for some time of small doses of the bichloride of mercury. He would never think of scraping off the mucous membrane, and then injecting the compound tincture of iodine into the uterine cavity, in such cases. With regard, more particularly, to the use of injections into the uterus, Dr. Tanner agreed with Prof. Simpson that their employment was fraught with danger. Such a proceeding might be adopted six, eight, ten, or more times, and no ill result follow; but he apprehended that every now and then alarming symptoms would set in, which were likely to end fatally. He had seen one instance in the practice of another gentleman, where the injection of a weak solution of nitrate of silver into the uterus caused great pain, which lasted some time, and was only subdued by large doses of opium. Even in one of Dr. Routh's cases there had been symptoms of tetanus after the scraping and injection. If caustics were required in the treatment of softening of the uterine mucous membrane—and he by no means meant to assert that they were—why not use the solid nitrate of silver? We are often told that gaseous injections into the uterus are valuable in relieving pain, and that their use is unattended with danger. Yet Scanzoni relates the case of a woman who was about to undergo amputation of an hypertrophied cervix uteri. Carbonic acid was injected into the cavity of the uterus by a suitable apparatus; but hardly had some cubic inches of the gas penetrated into the cervix, when the patient screamed out, and said she felt the air rushing into her abdomen, neck, and head. Tetanic convulsions then set in, and, after great suffering, death ensued in two hours. This case required no comment.

Dr. Granville had no experience of "scraping" the uterus. During his practice, he had not been accustomed to treat the cavity of the uterus with such disrespect as had been shown in more recent practice. To remove the mucous membrane for a possible good would be more than he would risk. As to injections, in some cases he had seen no effect produced, while in others he had witnessed very disastrous results.

Dr. Rogers was for some time unwilling to use injections into the cavity of the uterus. He had, however, for some years past employed them, and in no case had any serious result followed. With respect to "scraping" he had no personal experience to offer, but he had seen Dr. Routh's practice, and knew that no bad results had apparently followed therefrom.

Dr. Routh, in reply to Dr. Hewitt, stated that he had not followed these cases to know of their subsequent parturitions; but as these patients subsequently always menstruated regularly, and as in every labor the mucous membrane of the uterus was expelled as decidua and again produced, there could be no doubt that after scraping it off by the gouge it could be reproduced in like manner; and so procreative power, he did not doubt, was in no way impaired. In reply to Dr. Tanner, he could only say that softened mucous membrane of the uterus, or hæmorrhoidal membrane, such as described by Dr. Simpson, did exist, and apart from inflammation. He had seen such cases. In the one described in his paper where menorrhagia coexisted with procidentia uteri, and where the mucous membrane was perfectly visible, there could be no doubt of it. There was no danger in the operation, any more than in scraping any ordinary mucous membrane, nor even in injection of the same, if it had been previously fully dilated. In such cases the uterus was in the same position as a vagina. The danger was in injecting an *undilated* uterus, where, because the injection was retained, it created irritation and subsequent inflammation. Sometimes, it was true, injection produced temporary sickness and faintness; these symptoms might frighten one uninitiated, but they were purely nervous symptoms. In some cases, even the mere passing of a sound would produce like symptoms. In the case mentioned by Dr. Tanner there was no explanation of the death. If the case was that of a pregnant woman, as Dr. Hewitt stated, the death might be due either to the passage of carbonic acid in the uterine veins, or to perforation of the uterus. He had twice seen the uterus perforated by a common sound. In these cases no bad result had followed. In a third instance, which he had heard of, he believed death had resulted. At any rate, carbonic acid was commonly introduced into the uterus now-a-days, and with perfect safety. He had only instanced four cases as examples; but his experience was not limited to six, or eight, or even ten. In his own and Dr. Savage's practice he might have seen some thirty or forty cases, and all did well. But he (Dr. Routh) had not said that he treated all cases of menorrhagia in this way, but only those which had resisted other treatment. Many of these had been treated by medical men of large metropolitan hospitals, and these gentlemen certainly did not lack brains. If he, therefore, had cured in this way, speedily and without danger, several such cases, surely the plan was one worthy of the attention of the profession. After thanking Dr. Granville and Dr. Rogers—the former for giving him the credit of doing well, perhaps, although he had not practised the operation himself; and the

latter for having given him the evidence of his own observation and practice in similar cases—Dr. Routh said he hoped the plan would be tried more generally, but that all who did so should remember that the injections were only safe when the uterus had been so dilated by sponge tents as to admit of the free egress of the fluid injected.—*London Lancet.*

ON THE PHYSIOLOGY OF DIGESTION.

Prof. Busch, of Bonn, has had the opportunity of making experiments on digestion upon a woman who had been tossed by a bull, and presented, in consequence of the accident, a fistulous opening communicating with the small intestines. The fistula was so complete that the bowel was divided in two perfectly distinct halves. The upper portion consisted of the stomach, the duodenum, and of a probably minute piece of small intestine; the lower portion was composed of the remaining part of the small intestine, the colon, and rectum. Through the upper half, the food introduced into the stomach, as well as the digestive fluids of the latter organ, the liver, and the pancreas, escaped, no part of them finding their way into the lower half. This state of things was therefore favorable to the study of the action of the stomach, of the biliary and pancreatic secretions, and also of intestinal secretions independently of the liquids just named.

One of the first effects of the pathological state of this woman was a considerable loss of flesh, as observed when she came into the hospital six weeks after the accident. Her appetite was, however, insatiable, though she was as weak as those animals in whom artificial fistulæ are made. She was also very drowsy and cold; but this low temperature was merely objective, for a thermometer introduced into the intestine marked a normal heat. All these symptoms disappeared when the patient recovered a little strength, in consequence of a generous diet.

She used to swallow an enormous quantity of food without feeling satisfied; but by thus eating largely she felt better, though still hungry. When the stomach was empty she felt ill. The woman was so thin that the coils of intestines could be seen through the parietes of the abdomen; and it was observed that their peristaltic movements were as energetic as those of that portion of the intestine situated above the fistula and open to view.

As the intestinal secretion or juice was perfectly pure and unmixed with any chyme, which latter all escaped by the fistula, a good opportunity was offered for studying the nature of that juice. Prof. Busch found the quantity always small, and tried its effects upon protein compounds, starch and cane-sugar,

these being the first experiments of the kind ever made. The patient was at the same time fed by the introduction into the lower part of the intestine, through the fistula, of beef tea, beer, soups with flour, meat, hard-boiled eggs, etc. Soon after these injections were resorted to she had numerous stools, a circumstance which had not been observed since the accident. The evacuations had a well-marked smell of putrefaction, without any undigested portions of meat or hard-boiled eggs being noticed in them; this being a clear proof that the intestinal juice acted as a solvent upon the food passing through the canal.

M. Busch used to wrap the various substances introduced in a piece of muslin, after having carefully weighed them, in order to observe the action of the intestinal juice. He noticed that it was principally upon starch that this juice exerted an energetic solvent power.

An interesting point was to find out what would become of fatty matter without the assistance of bile or pancreatic juice. According to expectation, fatty substances passed without being absorbed, or at least but a very small quantity of them disappeared.

M. Busch also examined the state of the substances which escaped by the upper portion, namely, those which had been subjected to the action of saliva, the gastric juice, bile and the pancreatic juice. A very extraordinary fact observed was, the rapidity with which the alimentary substances escaped. In from fifteen to thirty minutes after the ingestion of the food by the mouth, it was observed to escape by the fistula; hard-boiled eggs appeared in from twenty to twenty-six and thirty-five minutes; cabbage took from fifteen to nineteen minutes; meat from twenty-two to thirty minutes; potatoes fifteen minutes. When the meal was plentiful, complete digestion required from three to four minutes. (?)

The substances which escaped by the upper end of the divided canal seemed at first sight to have undergone but little change; they were, however, considerably softened, and the meat presented both longitudinal and transverse cracks or slits. M. Busch thinks that the fluid in which these substances were suspended contained no longer any saliva.

We add a few of the proposition which the author considers as proved by the experiments above enumerated:

1. The peristaltic movements of the intestines are as vigorous when the bowels are covered by skin as when they are exposed to the air; they withstand the pressure of a column of water two feet high.
2. The intestinal tube has periods of rest and motion.
3. The intestinal juice is secreted in small quantity; its

reaction is always alkaline; and it contains, on an average, 5·47 per cent. of solid matter.

4. It decomposes starch and protein compounds.

5. It changes starch into grape sugar.

6. It decomposes protein compounds with the phenomena of putrefaction.

7. It does not change cane-sugar into grape-sugar.

8. Cane-sugar, when wholly absorbed, does not reappear in the urine.

9. Fat which has not been brought in contact with the bile or pancreatic juice is either not absorbed, or, if so, in very small quantities.

10. The first portions of the food introduced into the stomach reach the first third of the small intestine, on an average, in from fifteen to thirty minutes.

11. Cane-sugar held in solution disappears almost entirely at the beginning of the intestinal canal; any such cane-sugar which reaches the small intestine is changed into grape-sugar.

12. Unboiled white-of-egg is absorbed in the stomach or the first part of the intestine; the portion which goes beyond has not undergone any change.

13. Gum is not changed into sugar; it passes into the intestines without alteration.

14. Gelatine becomes dissolved, and loses the faculty of coagulation.

15. Traces of cascine in solution are found in the intestine after the ingestion of milk.

16. Fat forms an emulsion with the fluids which find their way into the small intestine, when these fluids have an alkaline reaction; the emulsion is incomplete when they are acid.

17. The mixture of juices in the small intestine has a digestive action on protein compounds.

18. The minimum of the digestive juices, which reach the upper part of the small intestine in twenty-four hours, weighs more than one-seventeenth of the whole body.—*Archiv fur Path. Heilk. & Gaz. Med. de Paris.*

PHYSICIANS IN CHINA.

We are so often stupefied with the pretensions and amazed at the absurd theories of English and continental quacks, that it is a refreshing amusement to go further afield and note the unsophisticated follies of a race of men who really believe the nonsense which they talk, and who are accredited with a curative power which is held by millions to be not inferior to that of the homeopath or the kinesipath. In some capital pictures of China, drawn by the pen of Mr. Cobbold, long resident in Canton, we find a sketch of the habits and theories

of the Chinese physicians which abounds in characteristic touches.

In China there is free-trade in physic—a good principle enough, but which has not yet led to all the desirable reforms in that art. A dose of Chinese medicine is quite a curiosity. It is about the size of half-a-pound of moist sugar, and consists of twenty separate packets—four or five kinds of bark, a little orange-peel, some walnuts, some gentian, and half-a-dozen other sorts, not unlike a small cake of blacking. These are boiled together, and a good half-pint of the decoction is to be taken *quite hot* as a dose.

The lowest fee for a visit is 60 cash, or about two-pence, and the coolies of the sedan have also to be paid. The fee advances by 60 cash at a time, so that 60, 120, 180, 240, etc., are the rates according to celebrity; very seldom, however, is a single visit charged more than 180 cash, or sixpence.

When you consult a physician, his mode of proceeding is this: He lays your hand on a soft cushion, feels your pulse at the wrists, asks your age and the symptoms of your indisposition, looks you attentively in the face, sapiently strokes his mustache, and then writes his prescription—perhaps "150 pills twice a day."

The principles upon which the prescriptions are founded are at least as complicated as the dose prescribed. According to the Chinese physiology, the human constitution is compounded of King, Mich, Shwny, Ho, Too—that is to say, gold (metal), wood, water, fire, and earth. These are combined in various proportions, so that if all remain in harmony, a man is in perfect health. If any one predominate, and acquire undue ascendency, his system is deranged and he suffers. This fanciful philosophy has a theological connexion. Each element has its presiding deity, and once a year grand feasts are held in honor of the five deities. At this time the streets are busy with men passing rapidly about in brick-red garments, with manacled hands, wildly dangling their chains, and accompanied by children, similarly attired in prison-dress, and calling themselves "culprits." These are persons who have been visited by severe illness during the year, and are thus seeking to honor the gods of the five elements. The connexion of this theory with the Chinese practice is amusingly illustrated by the observation addressed to Mr. Cobbold by a native physician, who was much concerned to see him eating so much roast meat, until he observed another habit, which set his mind at rest. He said: "Senior, I used to be distressed when I saw you eat so much roast meat; but now I see why it does not injure you: you drink large draughts of cold water, so that the fire is put out." With all this, it seems that they have practical success in the use of simples.

No previous examination is required for practice. The field is entirely open. Perfect free-trade prevails in the profession. It is thought that no restrictions are necessary, but that people may safely be left to their own choice of a physician; and if they suffer, it is their own fault, and they must blame themselves. *Caveat æger!—London Lancet.*

PRINTING ON TINTED PAPER.

Mr. Streatfield, the editor of the Ophthalmic Hospital Reports, gives the following reasons for printing that work on tinted paper: Mr. Babbage made the observation that colored paper is more favorable to distinctness than white. He subjected the matter to experiment by printing a page on paper of various shades and colors. Almost all those consulted agreed in giving the preference to the colored papers; but the particular tint was not so unanimously fixed upon. Yellow appeared to have the preference. Several editions of Mr. Babbage's Table of the Logarithms have been printed on the *same* yellow paper; some have also been issued on white paper, but the former are always most in demand. A gentleman much in the habit of using logarithms, ordered of his bookseller Mr. Babbage's work, and unexpectedly finding it printed on colored paper, he was much disappointed; but afterwards he was so much pleased with it, that he wrote to Mr. Babbage saying, that whereas he had only been able to use his eyes at night with books printed on white paper for an hour without resting them, he could, with the new book, continue for three hours without exertion. Mr. Streatfield believes that as the yellow paper of Mr. Babbage's book is so pleasant for candle-light use, so that now used for the Ophthalmic Reports is better for ordinary daylight. He believes that the color should be deeper in proportion to the size of the type, for he has observed that large placards on paper of a darker shade than could be used for any printed book, are very easily to be read. There appears, therefore, to be more philosophy in advertising posters than was dreamt of. Mr. Streatfield does not know why it is thought desirable to obviate the yellow color of some artificial light, and yet that the yellow-colored paper is most agreeable for reading; if it is so—and Dr. Wilson says, "Yellow is unquestionably the color most *visible* to all eyes,"—the reason remains to be proved; but it has occurred to him, that the organ of vision only requires for its use the luminous rays of the spectrum, not the heating or the chemical rays, which, no doubt required for our health in other ways, are not necessary for seeing. Yellow occurs near the center of the spectrum, *i. e.*, away from the heating and chemical rays (farthest from the latter); and green, which, next to

yellow, seems to be pleasantest to read with, is next to it in the spectrum, and *equally* remote from its heating and chemical extremities, where, moreover, it appears that the colors most fatiguing to the eye are found. The printers remark that the new paper "takes the ink" particularly well—a fact of some importance where wood-cuts are concerned. The subject is evidently one of great practical interest, and deserves careful scientific and experimental study. The curious phenomena of snow-blindness are interesting in relation to this subject.—*Ibid.*

ADDRESS OF DR. C. P. MATTINGLY, PRESIDENT OF KENTUCKY STATE MEDICAL SOCIETY.

Gentlemen: I have already expressed my deep and lively gratitude to the Medical Society of the State of Kentucky, for the honor it has pleased them to confer on me, in my election to this place. Regarding myself as one of its humblest members, I could not but ask myself, why I should have been selected, in preference to others, to fill so high and honorable a position. Nor can I conceal from you, who are here assembled, my continued want of confidence in my ability to discharge its duties, so as to meet your just and reasonable expectations. I refer especially to the duties and expectations involved in the exercises of the present hour.

Official usage has conferred upon the retiring President the enviable privilege, on this occasion, of addressing not only his medical associates and fellow-members, but also an assembly of others whose interest in our profession, or regard for us personally, induce them to identify themselves with these anniversary proceedings. But, like all other privileges, this has its trials and discouragements, and to me they are truly formidable ones.

When I call to mind the eloquent and learned addresses of my predecessors, filled with the wisdom of the past, and reflecting its light on the future, in their style and rhetoric evidence of genius and cultivation; when I remember what a pleasant glow of mental excitement played on the face of every hearer, during their delivery, when the speaker seemed to take hold of the minds and hearts of the audience, and lead them, by the formations of art, through the high-ways and by-ways of science; when I remember these things, and

call to mind that your humble speaker is attempting to fill the place of one of these, I am overwhelmed with the magnitude of the task, and exclaim, as I do from my heart, I am unequal to the task, and am neither likely to do justice to myself, nor meet the expectations of the Association over which you have called me to preside.

I speak to many whose own experience will enable them to understand how little, in the way of rhetoric and schclarship, is to be expected of one whose early education was limited to what could be afforded by our honored Commonwealth (enlightened and progessive as she now is) during the youthful days of one who is approaching the neighborhood of his half century of years, and the whole of whose period of manly life has been found amidst the cares, labors, and interruptions that beset a village physician.

One thought alone encourages me to make the effort. Your great partiality in placing me in this position will not desert me now. But with a mantle of charity, you will cover the thousand faults my own will would avoid.

With the hope of your kind indulgence for my short comings, I shall proceed to offer a very few practical remarks on the essential interests of our honorable profession, and on the manner in which all its members can best promote them.

This I may truly say: I love my profession, and yield to none in a desire to advance its interests or promote its honors, and hold myself ready at all times to defend it from assaults from within or without, open or insidious.

I have learned this, moreover, and would fain impress it upon all I can influence, that in advancing the honor and excellence of one's profession, individual respectability and success are most certainly secured. It is short-sighted policy, as well as meanness, to predicate the rise of one member of the profession on the ruin or downfall of his fellows. It is certainly more honorable to be the equal of honorable men, than to be never so superior to knaves or ignoramuses.

As a matter of mere policy, then, not to speak of higher motives, every physician is bound to exert himself for the elevation of his profession; and I would desire to acquit myself no better on this occasion if I could awake a realizing sense of this truth in the mind of every medical gentleman

present. Would that I could suggest to you, my brethren, not only the motives, but the means of imparting to the medical profession of my native State a new and ample measure of influence and power. But influence and power belong to science and virtue, and it is their prerequisites, therefore, that I must first commend to your assiduous cultivation.

Then, in the first place, what are the means of best promoting science among the great body of the profession?

Reunions, Associations, meetings like the present, are eminently serviceable in giving individuality, weight and influence to any special calling whose members are thus harmoniously combined; and therefore we should, each and every one of us, even at some sacrifice of interest and convenience, if needs be, make it a point to encourage and promote them by our personal attendance. But more directly promotive of scientific progress among its members, are the smaller and more frequent meetings of city and neighborhood practitioners. They excite interest — they stimulate investigation — they awaken ambition — they promote study. Many an experienced and enthusiastic practitioner will pour out the riches of his intellect and observation at these reunions of the profession, which would otherwise have benefitted himself only. Many a mind which, but for these meetings, would lie dormant, will be awakened to life and activity. Such meetings, rightly conducted, are capable of bringing up many a gem, which, but for them, would sleep forever in the unfathomed caves of the sea—of exhibiting many a flower which, but for them, would waste its fragrance on the air of the desert.

Thus believing, I cannot too earnestly exhort you to form such associations wherever they are practicable, and to do your utmost to contribute to render their meetings agreeable and profitable to all who attend them.

In the meantime, let it not be forgotten, that notwithstanding the advantages of these agreeable aids to medical inquiry and attainment, the only effectual and thorough mode of acquiring science or knowledge in any department of human research, is to read, to study, to think—there is no royal road to science, there is no other way of success, but the old beaten path of patience and persevering industry.

When the desire is once excited, when the attention is once

fixed on the subject, more than half the battle is won. "Where there is a will, there is a way," is as true as the Gospel. The main thing to be desired is the will. It is the will that damns, it is the will that saves, men. The chief art of teaching is, to interest, to excite the will, to fix the attention.

Science is power—there is no doubt of that. In other words, knowledge is power—and this is as true in medicine as in any thing else, though not so apparent to ordinary observers. The wisest physician among you would not attempt to engineer our cars from Bardstown to Louisville, for though no great amount of knowledge may be required for such a feat, yet it is not probable any one of you possesses that kind of knowledge which can alone confer the power of performing such a service with safety.

I need not dwell upon the necessity of this power, founded on knowledge, to a distinguished and successful career as a physician, but may be pardoned if I reiterate some suggestions already made respecting the best means of its acquisition. Libraries of some sort I hope all practitioners possess. Let it be your care to have them select, however small they may be. Besides a text-book, or systematic treatise on each of the departments, you should desire some one of the able compilations which have been prepared in the form of encyclopedias. Moreover, every physician should take at least one medical journal, and I would add, pay for it in advance. This is essential for every one who would keep up with the medical progress of the day, and know what is going on in the medical world. But Medical Associations, and Societies, as I have already said, more than any thing else, stimulate investigation, which results in the acquisition of useful knowledge.

In large cities the Medical Societies meet weekly or monthly, and the oral discussion of questions constitutes the principal part of their exercises. To acquit ourselves creditably on such occasions, requires that the subject to be discussed should be very carefully studied beforehand. For this, as well as other reasons, cities are more favorable to high attainments in medicine than country towns; nevertheless, a town with five or six physicians can enjoy the advantages of a Medical Society; and even country practitioners may, to a limited extent,

avail themselves of such advantages. Let them have regular meetings, at which some one of their members is to read a paper on some interesting subject, and the discussions growing out of it will prove interesting and instructive to all.

In political economy, a people is said to be badly governed, when the rich grow richer, and the poor, poorer. In medicine such an order of things is even worse. Let us, then, adopt the policy of frequent and informal meetings, freely imparting to each other that knowledge which we individually have—the receiver being the gainer, while the giver is none the loser. Thus may every one in his turn be made the gainer.

What I would insist on, as being very intimately connected with the elevation of the profession, and the good of humanity, is, a general *esprit du corps* among physicians. Let there be no jealousies, no envyings. The golden rule is as applicable in our profession as elsewhere. Let us do as we would be done by, and then there will be no attempt at rising on another's downfall.

When Joseph's dream, which he inocently told to his brothers, indicated that he was to be greater than they, they immediately became envious of him—jealous of him—and sold him into Egypt. They ought rather to have rejoiced, and been glad of his promotion; for if Joseph was to be King, they themselves might become Ministers of State.

Envy is very short-sighted. If my brother physician rises to success and greatness, I should rejoice at it, for I myself shall enjoy some advantages from his renown. This can not fail to be the effect, in a measure, upon the whole fraternity.

But such considerations aside. We are bound, as men, to promote each other's good. As respectable heathens, much more as Christians, are we under obligations to promote each other's welfare. Charity requires this, and charity and its good deeds are man's only immortal possessions. Charity never dies. In other words, good will to men survives faith and hope, when the one is lost in sight, the other in fruition. The good acts we do each other can not fail to have their eternal reward. This is the belief of the world—this is the creed of human nature. Youth and strength give way to age and decreptitude—golden treasures are often sunk and lost in the depths of the ocean—the fields may parch under a burn-

ing sky, and refuse to reward the husbandman—great attainments often serve only to make men the greater knaves—the bubble "reputation," which we court by the midnight lamp or at the "cannon's mouth, may burst and disappear. But good actions, benefactions to mankind, charity to each other, kindnesses done to our species, live for ever, and will receive their reward, not only in this life, but in a brighter sphere beyond the bounds of time.

(From the American Medical Monthly.)

PROCEEDINGS OF THE THIRTEENTH ANNUAL MEETING OF THE AMERICAN MEDICAL ASSOCIATION.

FIRST DAY.

The delegates to the Association met in the Chapel of Yale College, at New Haven, Tuesday morning, June 5th, and at 11 o'clock the Association was called to order, the President, Dr. Henry Miller, of Kentucky, in the Chair.

Prof. Fisher, of Yale College, opened the Convention with prayer.

Dr. Jonathan Knight, the Chairman of the Committee of Reception, welcomed the members of the Association to New Haven.

Dr. Charles Hooker, the Chairman of the Committee of Arrangements, also welcomed the delegates.

The roll was then called, nearly 300 delegates answering to their names.

The sections were then assigned their rooms, by Dr. Hooker.

All physicians and surgeons of the Army or Navy present were, upon motion of Dr. John Atlee, invited to take seats upon the floor of the Convention.

A report from the Committee on Parliamentary Rules was, after some discussion, laid upon the table.

Upon motion, a recess of ten minutes was had, to allow each State to choose its member for the Nominating Committee. Upon reassembling, the Committee on Nominations was declared; after which, the Association adjourned.

AFTERNOON SESSION.

The Association met at 3 o'clock, Vice President H. F. Askew, of Delaware, in the Chair.

Dr. Charles Hooker introduced Gov. Buckingham and Lt. Gov. Catlin to the Association.

The Secretary, Dr. Bemiss of Ky., then gave the names of the Committee on Credentials.

The retiring President, Dr. Henry Miller, then gave his address, which we are obliged to omit for want of space.

The Nominating Committee reported the names of officers for the Convention for the ensuing year, as follows:

President—Eli Ives, Conn.

Vice Presidents—Wilson Jewell, Pa.; A. B. Palmer, Mich.; Joseph P. Logan, Ga.; J. N. McDowell, Mo.

Treasurer—Caspar Wistar, Pa.

Several invitations to visit prominent public places and factories of the city, were read, and times set apart for such visits.

Motions were made of the acceptance of the invitations, etc.

Motion made to suspend business and receive the officers just elected.

President Dr. Ives then appeared, attended by the escort appointed by the Association, and was cordially received by the members. He then made a very short address, of which the following is nearly a verbatim report:

"All he had, all he was, he owed to his profession. He loved it. He has two sons in the profession, also a grandson; and he, like a very distinguished physician of the present century, could say he would visit the sick as long as he could go, and when he was unable, he would be carried to the bedside."

He was followed by the first Vice President, Dr. Wilson Jewell, who, on account of the age of the President elect, it was agreed upon should preside over the deliberations of the Convention.

Dr. Davis, of Indiana, offered a series of resolutions to the specific business of morning and afternoon sessions, as follows:

Resolved, That the general meetings of the Association, after this day, shall be restricted to the morning sessions, and the afternoon sessions, commencing at 3 o'clock, shall be devoted to the hearing of papers and discussions in the several sections.

Resolved, That each section shall choose its own officers, and make its own rules of order.

The first and second resolutions were adopted; the third, after much discussion, was laid upon the table, with the proviso that the mover should have an opportunity to revise it, and, at his own time, bring it again before the Association.

Dr. Little, of California, on motion of Dr. Timothy Childs, and seconded by Dr. D. S. Conant, was invited to a seat on the floor of the Convention, there being no delegate from California.

A Committee on Voluntary Communications was then appointed, viz.: Drs. E. D. Foree, of Ky.; T. W. Blatchford, of N. Y.; N. S. Davis, of Illinois; R. La Roche, of Penn.; Rochester, of N. Y.

At his own request, Dr. La Roche was excused from serving on this committee.

Dr. Reuchenberger, of Penn., was appointed in his stead.

The report of the Treasurer was then called for, read and adopted, then referred to Committee on Publication.

The Committee on Publication then reported. Report accepted.

Committee on Prize Essays was called on to report, but failed to do so through absence. Adjourned.

SECOND DAY.

The Convention was called to order by the first Vice President, Dr. Wilson Jewell, of Pennsylvania.

The President announced that the subscription list for the publications of the Sydenham Society was on the Secretary's table.

An opportunity was now given for delegates to name physicians from States not represented, and from the Army and Navy, as members by invitation.

Dr. Gardiner moved that the rules of order be suspended for Dr. Logan, of Georgia, to tender his resignation as Vice President. Resignation accepted.

Committee on Education reported—Dr. Reese, Chairman. He particularly dwelt on the necessities in preliminary education—Practical Anatomy, Pathology, and Clinical Medicine. He ably supported his arguments in favor of lengthened terms of study, with a less number of lectures per day—four being the maximum.

Dr. Brodie moved that the Report and Resolutions connected with it, be received and referred to the Committee on Publication. Received.

On motion, the report was received. The Association, on motion of Dr. McDowell, of Missouri, resolved itself into a Committee of the Whole, Dr. H. S. Acker in the Chair, and proceeded to the discussion of the Resolutions.

A motion was then made that the Committee rise, report progress, and ask leave to sit again, which was carried.

The Committee on Nominations reported that the Convention will meet at Chicago on the first Tuesday in June, 1861. Amendment offered that it be changed to the first Tuesday in May.

Dr. Davis, of Illinois, spoke for the Illinois delegation,

urging June as the proper month—furthermore, he welcomed the Convention to the hospitalities of the citizens of Chicago.

Motion was made to change the time to the second Tuesday of June; unconstitutional.

The whole list of officers was not reported yesterday. The Committee on Nominations here concluded their report, as follows:

In place of third Vice President, Dr. Logan, of Georgia. resigned, Dr. R. D. Arnold, of Georgia.

Secretaries—S. G. Hubbard, Ct.; H. A. Johnson, Illinois.

Committee of Arrangements—N. S. Davis, G. W. Freer, De Laskie Miller, E. Andrews, H. W. Jones, Thomas Bevan, J. Bloodgood, all of Illinois.

Prize Essays—Daniel Brainard, Ill.; D. L. McGugin, Iowa; M. L. Seaton, Mo.; John Evans, Ill.; A. S. McArthur, Ill.

Committee on Publication—S. G. Smith, Penn.; Caspar Wistar, Penn.; S. G. Hubbard, Conn.; R. J. Breckinridge, Ky.; Ed. Hartshorne, Penn.; H. F. Askew, Del.

Report of Committee on Prize Essays was called for—Prof. Worthington Hooker, of Conn., Chairman. Three Essays had been handed in—two of which had considerable merit, and showed much research. The Committee had concluded not to award any prizes this year. Report accepted.

Moved a suspension of the rules, to give Dr. Wilber, of N. Y., an opportunity to report the protest of Dr. Ignatius Langer, of Iowa, against the action of the Committee of Arrangements in not accepting his credentials as a delegate. The President stated he held in his hand a letter stating that Dr. Langer had been expelled from the Scott County Medical Society of Iowa, and therefore the rules of the Society would not permit his acceptance as a delegate here.

Motion to suspend, lost, almost unanimously.

Reports of Special Committees were then called for, and disposed of as follows:

Morbus Coxarius and Surgical Pathology of Articular Inflammation—Lewis A. Sayre, N. Y.; referred to the section on Surgery.

Surgical Treatment of Strictures of the Urethra—James Bryan, Penn., reported progress and asked for longer time; referred to its proper section.

Drainage and Sewerage of Large Cities, their Influence on Public Health—A. J. Semmes, Cornelius Boyle, G. M. Dove, D. C.; reported progress, and asked for longer time.

Puerperal Tetanus; its Statistics, Pathology and Treatment—D. L. McGugin, Iowa; report the same as above.

Hospital Epidemics—R. K. Smith, Penn.; laid over.

Puerperal Fever—S. N. Green, Indiana; laid over.

Anæmia and Chlorosis—H. P. Ayres, Indiana; reported progress, and asked to continue the Committee, to report next year.

Veratrum Viride—J. B. McCaw, Virginia; laid over.

Alcohol; its Therapeutical Effects—J. W. Dunbar, Md.; asked for a change in its title, making it read, "Alcohol in its relations to man,"—granted. Report next year.

Meteorology—J. G. Westmoreland, Georgia; laid over.

Milk Sickness—Robert Thompson, Ohio; partial report made—accepted and referred to section of Practical Medicine.

Manifestations of Disease of Nervous Centers—C. B. Chapman, Wis.; laid over.

Microscopic Observations on Cancer Cells—George N. Norris, Ala., Chairman asked to resign; Committee discharged.

Philosophy of Practical Medicine—James Graham, Ohio; laid over.

On some of the peculiarities of the North Pacific and their Relations to Climate—Wm. H. Doughty, Georgia; absent.

On the Microscope—John C. Dalton, Jr. N. Y.; David Hutchinson, Ind.; A. Y. Stout, Cal.; Calvin Ellis, Mass. Christopher Johnston, Md.; report next year.

Dr. Dalton, Chairman of this Committee, tendered his resignation by letter; accepted, and the Committee discharged.

Diseases and Mortality of Boarding Schools—C. P. Mattingly, Ky.; Dixi Crosby, N. H.; reported progress; referred to its proper section.

On various Surgical Operations for Relief of Defective Vision—M. A. Pallen, Mo.; T. J. Cogley, Ind.; W. Hunt, Penn.; laid over.

On the Blood Corpuscle—W. Sager, Michigan; referred to proper section, with additional time.

American Medical Necrology—C. C. Cox, Md. Report was ordered to be read before the Convention, to-morrow; amended to have Dr. Cox retained as Chairman and report next year.

Effects of the Virus of the Rattlesnake, when introduced into the System of Mammalia—A. S. Payne, Va.; reported progress and was discharged.

Constitutional Origin of Local Diseases, and the Local Origin of Constitutional Diseases—W. H. McKee, N. C,; C. F. Heywood, N. Y.; laid over.

Subcutaneous Injections as Remedials—I. Langer, Iowa; not allowed to report, not being an accepted delegate.

Quarantine—D. D. Clark, Pa.; E. M. Snow, R. I.; W. Jewell, Pa.; E. D. Fenner, La.; I. W. Houck, Md.; asked to be continued. Agreed to.

Medical Ethics—B. F. Schenck, Pa., Chairman. Resigned, and asked that Dr. Paul F. Eve, of Tenn., be substituted; agreed to. Report next year.

Tracheotomy in Membranous Croup—A. V. Dougherty, N. J., partial report; this was accepted, and referred to the Surgical Section. Further time allowed to make out the report.

Effect of Perineal Operations for Urinary Calculi upon Procreation in the male—J. S. White, Tenn. Letter from Dr. White read; laid over.

Mercurial Fumigation in Syphilis—D. W. Yandell, Ky.; laid over.

Cause and Increase of Crime—W. C. Snead, Ky.; asked to be continued. Agreed to.

Education of Imbecile and Idiotic Children—H. P. Ayers, Indiana. Report offered; referred to the proper Section.

Report of Committee on Medical Literature, referred to Committee on Publication; accepted without reading.

Pons Varolii; partial report. The Committee wished to be continued: agreed to. Referred to the Section on Anatomy.

AFTERNOON SESSION.

The Convention was called to order by the Chairman at 3 o'clock.

According to the resolution carried the day previous, the Convention adjourned to the various Sections.

THIRD DAY.

The Convention was called to order at 9 o'clock, the President, Eli Ives, M.D., of Conn., in the Chair.

Dr. Shattack moved a suspension of the rules for the purpose of introducing two resolutions; carried.

Dr. Bowditch reported the following resolutions on the Hunter memorial to be erected in Westminster Abbey; accepted:

Resolved, That it be recommended to the different States to collect subscriptions, of not more than one dollar each, from every regularly educated physician. All moneys so collected, to be forwarded by the Chairman of the Committee here, by appointment, to the Treasurer of the Hunter Memorial in London.

Resolved, That Drs. Henry I. Bowditch, of Mass.; Amos Nourse, of Maine; G. B. Twitchell, of N. H.; C. Clark, of Vt.; G. L. Collins, of R. I.; Charles Hooker, of Conn.; and many others, be a committe to collect subscriptions.

Resolutions adopted as a whole.

Moved that a copy of these resolutions be sent to all regular Medical Colleges in the country; carried.

Report of the committee appointed to confer with the American Medical Teachers' Convention. The resolutions

were discussed at some length by Drs. Flint, of N. Y., Shattuck, of Mass., McDowell, of Mo., Atlee, of Penn., Brodie and Palmer, of Mich., and Morse, of Maine.

The whole report was adopted and referred to Committee on Publication.

Committee on Nominations reported:

Committee on Medical Literature—Frank H. Hamilton and C. A. Lee, N. Y.: Edward Warren, Md.: W. C. Ely, R. I.; E. H. Clark, Mass.

Committee on Medical Education—L. S. Sayres, Va.; C. C. Cox and L. H. Steiner, Md.; I. C. Bradbury, Me.: M. A. Pallen, Missouri.

Surgical Treatment of Stricture of the Urethra—James Bryan, Penn.

Drainage and Sewerage of Large Cities—A. J. Semmes, La.: C. Boyle, Ga.; W. C. Dove, D. C.

Puerperal Tetanus: Statistics, Pathology and Treatment—D. L. McGugin, Iowa.

Anæmia and Chlorosis—H. P. Ayer, Indiana.

Alcohol and its Relations to Man—J. W. Dunbar, Md.

Milk Sickness—Robt. Thompson, Ohio; S. M. Bemiss, Ky.

On the Effect of Perineal Operations for Urinary Calculi upon Procreation in the Male—J. S. White and R. C. Foster, Tenn.; J. B. McCaw, Va.

Mercurial Fumigations in Syphilis—D. W. Yandell, Ky.

Cause and Increase of Crime—W. C. Snead, Ky.

Resolution made and accepted that a seal of this Society be given to every Medical College in good standing, and withdraw it upon evidence.

AFTERNOON SESSION.

The Association was called to order by the first Vice President.

The President requested the Committee on the Hunter Memorial to retire for private business.

Report of Committee on Medical Topography and Epidemic Diseases referred to the Committee on Publication.

Committee on Hospital Epidemics discharged.

Committee on Puerperal Fevers discharged.

Committee on Veratrum Viride discharged.

Committee on Improvements in Surgery referred to the Section on Surgery.

Committee on Inebriate Asylums referred to Committee on Publication.

The President called for a report of each of the Sections.

1. Anatomy and Physiology; referred to Committee on Publication.

2. Practical Medicine and Obstetrics; report adopted.
3. Section on Surgery; report adopted.
4. Meteorology; report adopted and referred to the Committee on Publication.

Resolutions from the Essex County Medical Society of New Jersey were offered and adopted.

Moved that a special committee be appointed to confer with the different Legislatures on the subject of the resolutions.

Motion made and carried that Dr. Cox be continued on the Committee of Necrology.

Report of the Committee on Tracheotomy was read; adopted. Referred back to Committee, to continue and report next year.

A communication from the Judiciary Committee of the Connecticut Legislature was read, asking that a committee be appointed to report a bill upon the subject of Criminal Abortion, for action at the next session; carried.

The Chair will appoint a committee in due time.

Moved that the American Medical Teachers' Convention be perpetuated in connection with the American Medical Association, and delegates appointed to meet from each Medical School, the day before the American Medical Association, at the same place.

Amended to "meet regularly," instead of being perpetuated; carried.

Moved that the Committee of last year on this subject be continued.

Moved, by Dr. Atlee, that the Hunterian Committee be empowered to fill all vacancies in it; carried.

Communication from Elmira, N. Y., read. Referred to Surgical Section.

Moved and carried, that a vote of thanks be offered to Dr. Bemiss for his efficient services as Secretary. Amended by substituting "Retiring Officers."

Resolution offered of thanks from this Association to the Faculty of Yale College, and to the citizens of New Haven, for their elegant hospitalities and kindness during its stay here; carried unanimously.

Dr. Hooker spoke to the Convention in regard to commutation tickets.

Moved that the Convention go into Committee of the Whole; carried. Dr. Askew in the Chair.

A discussion was called up in regard to the Resolutions of Committee on Education, Dr. Reese, Chairman.

Dr. Gardner moved the Committee rise, report progress, and refer the resolutions entire to the Committee on Publication.

Dr. Hamilton, of Brooklyn, offered a resolution for a bill for the establishment of a College of Physicians and Surgeons of American Medical Association. Discussed by Drs. Hamilton, Gardner and others. Resolution withdrawn.

Dr. Dixi Crosby addressed the Convention as to its general action.

Motion made that the Convention adjourn *sine die.* Carried.

PROGRESS OF DENTAL SCIENCE.

By J. A. McCLELLAND, Dentist.

We have received from Messrs. Jones & White, Philadelphia, a specimen of the following work, translated from the French, and from which we make a few extracts:

DENTAL ANOMALIES AND THEIR INFLUENCE UPON THE PRODUCTION OF DISEASES OF THE MAXILLARY BONES.

BY AM. FORGET, M.D., C.L.D., ETC.

Memoir Crowned by the Academy of Sciences, at its Meeting of the 14th March, 1859.

The above is published in pamphlet form, comprising 34 pages of beautifully printed matter and six neatly executed plates with full explanations. It will be sent free of postage by Messrs. J. & W. on receipt of forty cents in postage stamps.

Observation 1.—Osteo-dental tumor, size of a large egg, encysted in the thick part of the inferior maxillary—ulcerous inflammation of the parietes of the cyst—numerous ossifluent fistulæ—resection of the left half of the body of the jaw and a portion of its branch—cured.

Early in May, 1855, M. L., a banker of Guadeloupe, introduced me to his son, whom he had brought to Paris with the intention of subjecting him to the necessary surgical operation for the remedy of a disease of the inferior maxillary, which had made its first appearance when the patient was five years old.

History of the Disease.—At that period (five years) young L. suffered from pains in his left jaw; they were for some time intermittent, then continuous and acute. When the patient was seven years of age, two small healthy molars were extracted, under the belief that they were preventing the evolution of the second teeth. The operation gave great relief, and the pain ceased; but shortly afterwards a small, round, hard tumor appeared on the external face of the jaw, near the

alveoli of the teeth that had been removed. The tumor caused no suffering to the patient, and made no sensible progress for a period of eight years. The whole of the left side of the jaw then became tumefied, and the bone, in the words of the patient, broadened and rounded. He also observed at this time that the large molars were wanting in the diseased part, while they were regularly developed on the right side.

This morbid enlargement was accompanied by frequent fluxions of the gums, cheek, and whole left side of the face. The recurrence of this fluxion was attended by great pain, and caused an increased tumefaction in the soft parts to such an extent that the difference between the sides of the face became absolute deformity.

In November, 1854, a violent inflammation occurred in the base of the jaw and the cervico-maxillary region. Antiphlogistic treatment was employed, two applications of leeches were made, and the inflammatory symptoms decreased, and, fifteen days afterwards, purulent matter formed in the thick part of the cheek, which opened spontaneously, allowing the issue of a large quantity of fetid matter. The opening of this abscess became fistulous; the surrounding tissues thin, detached, and under them the bone was naked for a very considerable extent.

Actual Condition.—Young L., aged twenty, strong, well-developed, with an excellent constitution, and health perfect in all respects, excepting the local affection.

The disease appears externally in a considerable tumefaction of the left cheek, which is more than three times its natural size; and the tumor has caused a very marked eccentric development to the corresponding maxillary bone.

When the patient opens his mouth, which he does without effort, the whole left side of the bone was seen to resemble a large turkey egg; the base of the jaw being confounded, without appreciable line of demarkation, with the internal and external faces which describe a very considerable curve.

The tumor is uniform, without depressions, or any irregular swellings upon the surface. It does not yield to pressure, and no part of it gives that sound of crepitation which is a characteristic of attenuation of the osseous tissues. The external swelling hides the superior and lateral part of the neck, descending in front several centimetres, [0·3937 inch.] The enlargement of the bone has forced the tongue from its true direction, and the floor of the mouth has been driven from the left to the right.

The alveolar ridge, singularly enlarged, contains none of the grinding teeth except the first bicuspid, which stands regularly in its socket. The tissue of the gums is dark red, and

unusually thick and hard. In a circumscribed spot, about the size of a twenty-centime-piece, the tissue is broken, and exhibits an unequal, wrinkled, grayish surface, which gives a dry sound when struck with a metal probe, as if the crown of a tooth were hidden in the cavity.

The disease does not extend in front beyond the symphysis of the chin; behind, it reaches a point on the posterior edge of the ramus, that can be touched by inserting the finger into the isthmus of the throat. The upper portion of the ramus is perfectly healthy, as is also the neck and the condyle.

I will add, in order to complete the symptomatic description, that there are many ossifluent fistulous openings at the base of the tumor—two fingers'-breadth from the left labial commissure there is an old purulent collection that has caused the detachment of the skin, which is purple and very thin, to the extent of four centimeres. Finally, many submaxillary lymphatic ganglions are much hypertrophied and hardened.

The functional disorders arising from this pathological condition, which were very slight at first, are now increasing every day; vocal utterance is embarrassed; mastication is painful and incomplete; deglutition is effected with difficulty; and respiration is very difficult every time inflammation is renewed in the tumor. Lastly, the patient suffers from two serious inconveniences, one resulting from the very marked deformity of the face, and the other from the incessant flow of fetid pus proceeding from the complicate fistulæ of the osteo-dental caries.

Diagnosis of the Disease.—An analysis of what has been already stated will give us, in the first place, a fact of primary importance, which I think shows the very origin of the evil, and seizing its intimate nature, exhibits the initial point of departure. I refer to the connection between the occurrence of the disease in the jaw and the process of the second dentition, in which the jaw-bone was the center of a fluxion, determined and maintained by the excessive nutrifying action of which it was then the seat.

A little later, that is at seven years, the precise period when the growth of the dental bulbs is completed by their eruption from the alveoli, the pains increased to such a degree that the extraction of two healthy teeth was considered necessary. This operation caused only temporary relief, and was soon followed by a new morbid manifestation, viz., the tumor. If these remarks are not sufficient to establish the histological connection that I have in view, let us add the additional fact that appeared some years later—the absence of the large molars. This anatomico-physiological aberration, the morbid accidents that preceded it, and the pathological fact that occurs in the tumor, can not be a mere coincidence.

But if it is so easy to reach the origin of the evil, is it equally easy to explain its nature? This part of the problem may be more difficult, but I do not believe that the solution is impossible.

Taking into consideration the slow development of the tumor, the uniformity of its exterior, its circumscribed limits, the firmness of the different parts of its surface, bounded in every direction by a bony plane, I would immediately assume the existence of a pathological product in the center of the maxillary, and that the eccentric development of the bone had followed the growth of this product in such a manner as to enclose the whole of it in a cyst. I have often observed similar proceedings of nature, and I dwelt upon them in my inaugural thesis of 1840 (Researches into the Nature and Treatment of the Cysts of the Maxillary Bone), under the designation of the osseous cyst containing a solid product. I believe that the composition of the latter can not be ascertained with certainty, and, therefore, without speaking of the nature of the anatomic elements which constitute the pathological production, I will restrict myself to diagnosticating to the center of the maxillary bone the existence of an omeomorphic tissue—considering the hypertrophy of the cervical ganglions as the result of a sympathetic irritation, and not as a symptom of cancerous infection. The unimpaired health of M. L. is sufficient ground for this belief; for, if the malady had been of this malignant character, it would have produced more serious local disorders, as well as deleterious effects upon the general system.

Unwilling to depend entirely upon my own skill, I appealed to two of my colleagues of the Chirurgical Society, MM. Michon and Denonvilliers, who, after examining young L., agreed with my opinion upon the method of the development of the disease, its nature, and the necessity of resecting the half of the body of the bone—an operation which I performed with their assistance, and in presence of MM. Pinel de Golleville and Mongeal, and M. Felix Baudoin, a distinguished pupil of the Paris hospitals, on the 16th June, 1855.

Anatomical Examination of the Tumor.—With the surrounding soft parts it was an exact ovoid, thirty centimetres [11·8 inches] in circumference at its greatest diameter, and twenty [9·05 inches] at its least.

I next divided the tumor, along its axis, into two equal parts, each confined to the corresponding half of the osseous cyst that was comprised in the division. This revealed the composition of the tumor: it was formed of a smooth, glossy, compact, homogeneous, ivory-like tissue of a whitish-brown color. In the center of it a kind of regular disposition of its elements could be discerned by the naked eye.

I also found the second small molar obliquely developed in the thick part of the bone, directly beneath the alveolus of the first molar, which was standing in its true position. This second molar was the tooth that I had encountered in the operation.

The results of the observation may be stated in brief, thus:

1. An original union of the follicles of the two last molars, followed by an intimate fusion of them, caused by phlegmasial or other action.

2. Under the same morbid influence, the excess of vitality in the organic elements of the follicles has produced hypersecretion of ivory-like and osseous substances.

3. That the irregular aggregation and diffusion of these has constituted the pathological growth.

4. And lastly, its growth has formed in the jaw the cyst already described; and it has maintained therein a permanent inflammation, which has disorganized the osseous tissue and altered the structure of the adjacent soft parts to such an extent that a radical operation is unavoidable.

RESUME.

Diagnosis—Treatment.

The diagnosis of the diseases of the maxillary bones which we are about to consider, and which have been generally comprised under the too vague denomination of osteo-sarcoma, has been long undetermined, confused, and liable to numerous errors.

Pathological anatomy, by a thorough study of the histological elements of these diseases, has recently given us a more exact idea of their nature; and, when combined with clinical instruction, permits us to distinguish between them, and to conform the treatment to the anatomical varieties that characterize them. This is the aim that I have proposed to myself in this work, and I will have attained it if, as I hope, the etiological researches contained in it have thrown light upon a question of pathology until now very obscure, and opened a way for a more severe therapeutical induction.

Thus, in recapitulating the observations recorded in this treatise from a symptomatic point of view, we find one constant and primordial fact that serves to point out precisely the very origin of the malady; it is the absence of one or several teeth which have not taken position in the aveolar arch at any epoch. This principal circunstance is usually accompanied by very obstinate neuralgias, that are caused by the displacement and elongation of the dental nerves which are deflected from their true direction. This same circumstance causes, more or less immediately, the formation of an intramaxillary cyst,

which appears sooner or later on the exterior under the more or less distinct form of an osseous tumor.

When an osseous tumor appears having such antecedents, the surgeon is the more authorized in acting against it, because, in thus assailing the evil at its origin, his intervention can prevent the ulterior consequences, which, although varying in extent and gravity, have nevertheless one common characteristic—the development of the bone which is the seat of the tumor. The hyperostosis thus produced may be unilateral—that is, confined to one of the faces of the bone; or it may be juxta-alveolar, or circumscribed to a single alveolus; or lastly, it may be circumferential, in which case it occupies the whole of the osseous body.

The osteite, which, as we have seen, is the direct cause of it, is either condensing or rarefying.

In the former case, it is characterized by the peripheral accumulation of osseous elements in excess; this arrangement was particularly evident at the angle of the lower jaw and at the base of the coronoid apophysis in the subject of the ninth observation.

In the second case, the osteite causes a very abundant vascularization of the osseous tissue, the vitality of which is sensibly increased. The excessive nutritive movement which results, is marked by the disaggregation of the calcareous elements and the hypertrophy of the organic substance, which in some cases even forms a genuine interlamellary myeloplasm, an arrangement that causes the jaw to lose its consistence, and makes it very fragile.

These two pathological states may end in suppuration, and cause the formation of numerous encysted abscesses. It is these that we have seen coexisting, especially with the anomalies in the position of the teeth.

The third morbid form is met more particularly accompanied with the anomalies of nutrition—that is to say, with those where the dental osteide constitutes a voluminous tumor. This form is explained by a sort of partial or general diduction of the two tables of the bone, which, by the slow reabsorption of its organized elements, is finally transformed into a cavity, the walls of which are formed of a bed of compact tissue that is often very thin. On the borders of these encysted products, it is not unusual to find the bone exhibiting in its continuity all the characteristics of the condensing osteite.

It is to be remarked that in all the observations the disease was developed very slowly. Stationary for a long period, the disease remained very distinctly circumscribed to the jaw, and did not at any phase of its evolution exert upon the constitution of the patient that deleterious influence which belongs

to the accidental productions of a malignant nature. Finally, the most minute anatomical examination has in no case discovered the presence of hetermorphic elements of the nature of those that characterize cancerous affections.

This last circumstance, though not more favorable to the prognosis, is not less interesting in regard to the treatment. For if the intervention of a surgeon can not be too radical in an instance of cancer, it is certain, on the contrary, that more caution and moderation are necessary when it is a question of a lesion, which is essentially local and of a benignant nature, and allows the surgical operation to be restricted to the precise limits of the lesion, without it being necessary to provide against an improbable repetition, by encroaching upon the osseous tissues that border on it, and thus subjecting a patient to a mutilation which could not be justified.

Thus we have shown an instance where the disease was confined exclusively to the alveolar tissue, while the base of the jaw, if not perfectly in tact, was at least but slightly affected. And the anatomical researches which I have presented demonstrate the possibility of persevering the continuity of the bone in most instances, and make it a duty of the surgeon not to have recourse first and foremost to the partial amputation of the jaw.

It would be wrong; however, to infer from this general remark that there can be practically a rule of uniform conduct for the remedy of the various pathological conditions described in this treatise. To draw up a series of precepts that are absolute and necessarily obligatory, when experience presents us with facts so different in form, aspect, and importance, although springing from a common origin, would have the effect of inclining us to disregard those particular indications which arise from individual differences, and are observed by nature even in the secondary disorders which occur not only in the maxillary bone, the seat of the evil, but also in the surrounding soft parts.

Thus, there are some cases, like that mentioned in the third observation of this treatise, which require only a simple extraction of the foreign body in order to make the cure complete. While there are others, on the contrary, that necessitate a much more serious operation.

In the latter, moreover, whatever they may be, the surgeon should take into consideration an important indication, for which we are indebted to the admirable researches of M. Flourens upon the regeneration of the osseous tissue, and preserve as much as possible the periosteum in the wound, by a sort of preliminary decortication of the jaw which he is compelled to remove.

In addition to this, I hasten to make the acknowledgment, the way to treat such tumors is not always clearly indicated. However attentive the clinical examination may be, it does not always succeed in dissipating the incertitudes of the diagnosis, which is often rendered very obscure by the origin and seat of these morbid productions at the center of the osseous tissue which envelopes them on all sides. But the doubt, in such a case, militates in favor of that prudent and conservative surgery to which the artist should always hold his acts accountable.

Editorial Department.

**Hamilton on Fractures and Dislocations*: 757 pages, 289 Wood Cuts. Published by Blanchard & Lea.

Page 438, Case—"While I am writing: a gentleman living about eight miles from town has been thrown from his carriage, breaking the left femur just above the condyles into many fragments, so that when I saw him on the following day, the attending physician showed me about four or five inches of the entire thickness of the shaft which he had removed."

Page 41, Case—"Crepitus, occasioned by the chafing of the broken surfaces upon each other, when actually present, is almost positive evidence of the existence of a fracture."

The above were among the first sentences upon which our eyes rested as we carelessly glanced at the general arrangement and style of Dr. Hamilton's work. The reader, therefore, may imagine what our first impressions were in reference to the literary attainments of the author. Whilst, however, we are constrained to express regret at the manifest carelessness with which portions of the work have been composed, we can still assure our readers that we conceive it to be one of the most valuable additions to surgical literature, or at least to that department thereof, of which it is the object of the work to treat, that we have seen for many years. We regret exceedingly that the author has not treated of compound fractures with greater length, and looked in vain for what we conceived ourselves entitled to, because of his reputation as a practical

*This notice has been in type some time, but has been unavoidably crowded out of former Nos.—Ed.

man. We trust that this deficiency will be atoned for in subsequent editions. The subject of ununited fractures might receive some elucidation from Dr. Detmold, of New York, whose delicacy might prevent him from giving an unpublished page in the history of surgical advancements in this particular, but who, nevertheless, might "a tale unfold," which would be interesting to all interested in the truth of history, and the exposure of literary thieves whose name in our profession is legion. Dr. Hamilton, however, does not know of the matter to which we allude, and his whole work is an evidence of his willingness to "render unto Cæsar the things which are Cæsar's." Let no one be without this work. We have known of some practitioners to whom it would have saved many hundreds of dollars, if they had studied and heeded its teachings.

TOYNBEE ON THE DISEASES OF THE EAR.

There is not, perhaps, any department of Surgery more utterly barren in its literature than Aural Surgery. The fact is attributable to many causes. Among these may be enumerated the extreme difficulty of making good dissections of the apparatus of hearing, the greater difficulty still of making these dissections upon subjects whose previous history is known, and the dark obscurity in which the physiology of the apparatus has been enshrouded, for the pathological condition of a part or organ can only be determined from its known physiology. And yet diseases of the ear, like other ill-understood affections, are the fruitful sources from which spring much of the quackery of the present day. How gladly, then, should we hail the dawning of the faintest ray calculated to illume this department, and how much more gladly rejoice in the promise of a full blaze of meridian knowedge.

The book before us is replete with matters of practical moment, and hence will become an invaluable aid to the surgeon. But the physiologist of the present day demands a closer scrutiny, and asks respecting the condition of the cochlea and semi-circular canals, etc., in the cases reported, and is not satisfied with silence respecting them. Nor is he better pleased with some of the expressed physiological views of our

author, or the surprise with which he alludes to certain phenomena which we would certainly expect to be produced by the described pathological conditions of the parts. Nevertheless, it is a work of great merit, and we most cheerfully commend it to our readers, satisfied that they will feel under obligations to us for so doing, and will acquire from its perusal an amount of practical information which they will value above rubies. The work contains 100 engravings, and consists of 440 pages. Of its execution, it will be sufficient to say, that it is published by Blanchard & Lea. It should be in the library of every practitioner of medicine.

Electro-Physiology and Electro-Therapeutics. By Alfred C. Garrett, M.D.

Man is ever too ready to be contented with himself, and is extremely jealous of innovations. What is true of an individual in this respect is equally true of a multitude, a corporation, or a profession. From this truth multifarious evils have arisen and propagated themselves in hydra forms. Especially are these evident, as proceeding from medicine and theology, which have ever been the prolific parents of error and schism, while the great truths which each is designed to teach remain unalloyed. The errors which have given birth to empiricism and skepticism have not been the errors of science or religion; but they have been those of such as should have stood upon the watch towers, carefully guarding the holy prize of truth. Some, however, have slept at their post; some have been traitors to their trust; some have tremblingly magnified the most pigmy individual foes into giant armies, and by fear have dignified their enemies into position.

The medical scholar readily recognizes the source from which have emanated the various isms and pathies of the present day, and views their fungoid attachments to the old storm-tried and noble trunk, as excrescences to be removed by the vitality of the tree itself rather than by the ruder hand of art.

If hyper-medication has aborted homeopathy, and the lancet has bred the distorted form of Thomsonianism, and a hydrophobic treatment has conceived hydropathy, should we

spurn our own progeny because of their deformity or ridicule the rickety forms whose substance was in our own loins? Nay, let them live their ephemeral life, but let no niche in the Temple of Time perpetuate the remembrance of their deformities. Let them not be magnified by opposition, or trodden upon by the iron heel of assumed infallibility.

If we were wisely to interrogate history regarding the primitive sources of these and kindred monstrosities, history would respond that their source was ignorance, not ignorance in the originators of these falsities, who were wise in worldly wisdom and clearly foresaw in the known desire of man for novelty, that the cash balance of such philanthrophy would be greatly in their favor, but ignorance and presumption in the trustees of science themselves who had not the magnanimity to acknowledge their own deficiencies or the policy to avert the evils which threateningly surrounded them.

While it is doubtless true that the great majority of specialists are the most consummate of quacks, it is equally true that from the investigations of specialists the cause of truth has been most illumined, and the very evils to which we have alluded have been productive of great good in the salutary lessons they have taught. It is the part of wisdom to discriminate between those who pursue a special branch from a love for, or a desire to make a careful study of it, and those who do so as a matter of business speculation. It is very easy to determine to which of these classes the author of the work before us belongs, and equally easy to perceive that he is a gentleman of learning and a profound and practical thinker. The book is divided into ten chapters, treating of Natural Electricity, Early History of the Medical Uses of Electricity, Electrical Instruments and Apparatus for Medical Purposes, Electro-Physiology, Methods for the Medical Employment of Electricity, Hyperæsthesia, Anæsthesia, Spastic Diseases, Midwifery, and Electricity in Surgery. A careful perusal of the work will convince any one worthy of being convinced, that judgment formed from the opinions or treatment of traveling or local electropathists may be very unjust, and that there is an absolute potency in electricity and its modifications in the treatment of disease which we may not safely ignore. Nor will the reader find upon every, or any page, those glaring

evidences of the disposition of specialists generally, to ride their hobby into the mire. On the contrary, the author's propositions, and the scientific bases claimed for them, are modestly suggested, and therefore however much the reader may feel disposed to question the correctness of the positions assumed, or the force of the arguments used to maintain them, he will feel less self-reliance than he would feel if he were perusing an ostentatious claim to the universal applicability of electricity in the treatment of disease.

The work is published by Ticknor & Fields, of Boston, to whom we are indebted for the copy before us. It is beautifully executed and liberally illustrated, and if the profession be true to its own interest another edition will soon be demanded.

REMARKABLE COINCIDENCE OF THOUGHT AND EXPRESSION.

A NEW BOOK: THE MEDICAL USES OF ELECTRICITY IN THE TREATMENT OF NERVOUS AFFECTIONS.—We learn that a new work upon the above subject is about to be issued from the press of Messrs. Ticknor & Fields. This will be a thoroughly systematic work of over 700 pages, and finely illustrated with nearly 100 cuts, showing not only the best "*Methods*" for the therapeutical employment of electricity in the various nervous diseases, but also *showing the anatomy of the parts* (nerve-trunks and muscle fibres) liable to be involved; moreover, presenting a concise view and means of diagnosis of the great variety of nervous affections met with in every-day practice. This work is from the pen of Alfred C. Garratt, M.D., of Boston, who of late years, it is well known, has made this difficult department of medicine his *specialty*. It is addressed to medical students, and is dedicated to Dr. John Homans, President of the Massachusetts Medical Society. It is intended for the professional eye. There is no similar work in the English language.—*Cincinnati Lancet & Observer for June*, 1860, *p.* 378.

THE MEDICAL USES OF ELECTRICITY IN THE TREATMENT OF NERVOUS AFFLICTION. A new and important medical work is published by Messrs. Ticknor & Fields. This is a thoroughly systematic work of over 700 pages, and finely illustrated with nearly 100 cuts, showing not only the best "*Methods*" for the therapeutical employment of Electricity in the various nervous diseases, but also *showing the anatomy of the parts* (nerve-trunks and muscular-fibres) liable to be involved; moreover presenting a concise view and means of diagnosis of the great variety of nervous affections met in every-day practice. This work is from the pen of Alfred C. Garratt, M.D., who of late years, it is well known, has made this difficult department of medicine his *speciality*. It is addressed to medical students, and is dedicated to Dr. John Homas, President of the Massachusetts Medical Society. It is intended for the professional eye. There is no similar work in the English language.

We will notice it fully in our next.
—*St. Joseph Journal of Medicine and Surgery for July*, 1860, *p.* 192.

It will be observed by reference to the report of the proceedings of the American Medical Association at its 13th annual meeting, that that honorable body convened at Yale College. Prayer. Were welcomed by Dr. Knight and again by Dr. Charles Hooker. Invited officers of Army and Navy to take seats. Tabled report of Committee on Parliamentary rules.

Invited the members of Legislature to hear the President speak. The President did speak. New officers were elected. The new President spoke and did not violate either the rules of grammar, or good taste, or introduce a bundle of private grievances under his official cloak. Adopted rules for action. Discussed the question and decided as to how writing members might best appear in print. Heard Treasurers report. Talked of and accouched the pregnant theme of Medical Education in Committee of the whole. (Much was said on this subject which probably never will be publicly reported, it was too truthful and too racy.) Committe rose, reported progress, asked leave to sit again and didn't do it. Concluded to meet next year at Chicago. Committee on Prize Essays reported that they had not received one worth a prize. Heard Dr. Lewis, A. Sayre of N. Y., report on 72 cases of morbus coxarius. Heard Committee on Strictures of Urethra, Drainage and Sewerage, Puerperal Tetanus, Anæmia and Chlorosis, Diseases and Mortality of Boarding Schools, and Virus of Rattlesnake *report progress.* Heard Committee on Hospital Epidemics, Puerperal Fever, Veratrun Viride, Meteorology, Diseases of Nervous Centers, Philosophy of Practical Medicine, Operation for relief of Defective Vision, Constitutional origin of Local Diseases etc., Effect of Perineal operations etc., and Mercurial Fumigation in Syphilis all *"laid over."* Heard Committee on Alcohol, Microscope, Medical Necrology, Medical Ethics, *promise to report next year.* Heard Committee on Milk Sickness, Tracheotomy in Croup, Pons Varolii make partial reports and referred them together with the report of Committee on Idiotic children to their proper sections. Heard Committee on Microscopic cells *discharged.* Heard Committee on Quarantine and cause and increase of crime, ask *to be continued.* Heard the Anathema Maranatha of the Association hurled against the Committee on Subcutaneous Injections as Remedials, because the Committee of one had asserted that he had done what a country society stated to be an "impossibility in fact," but which is known to be as possible as the reduction of a dislocation, and because also upon ex-parte testimony an officer of the association had very thoughtlessly joined in the whillaboloo. Appointed twenty-eight new Committees. Recommended that "each regularly educated Phy-

sician," (we suppose he must undergo an examination before subscribing) "should pay one dollar toward the memorial to Hunter." Concluded to send a seal to each school in good standing, reserving authority to withdraw it. Heard "various special Committees called upon to report and failing to do so, discharged." Referred several reports to Committee on Publication. Referred complaint of Clinton County Medical Society against the Western Reserve College, to Committee on Ethics. Authorized the Chair to appoint a Committee to draft a bill on criminal abortion, in accordance with the wishes of the Legislature of Connecticut as expressed in their communication. (We believe this was the only Legislature which sought the assistance of the association. We suggest the appointment of a Committee on aid to Legislatures.) Perpetuated the convention of Medical Teachers in connection with the association. Thanked the Faculty of Yale College, the Doctors, Citizens, Manufacturers, Railroad and Steamboat Companies, for kindness received. Heard in Committee of the whole "an animated discussion," on the Report of Committee on Medical Education. Concluded that they could not conclude and rose stating that they had no suggestions to make to the Association, and recommended the resolutions to the Committee on Publication. Entered into a desultory conversation regarding the appointment of a Board of Examiners or College to determine the matter of who should be Doctors of Medicine. Adjourned *sine die.*

Now we submit that the above is a complete synopsis of the proceedings of the Association and the question arises as to its utility, for upon its usefulness will depend its potency. It is idle to be mealy-mouthed about this matter from a fear to speak evil of dignities, or to incur the displeasure of a few members.

We honor the association and bow to none in reverence for its worthy members but when we examine what was absolutely done little as it was, at the last meeting, we are free to say that there was more of wrong than of right, of evil than of good achieved.

One great wrong is the virtual admission that as an ethical court the association is a nullity, and that the highest ethical tribunal is a little local society whose members may be as

ignorant of ethical propriety as they are of obstetric lore, and yet, their decision is a two edged sword. Their opinion is not to be questioned; their award is final. From their fiat there is no appeal. In brief the only safety lies in avoiding local societies altogether. It is idle to speak of the safe presumption that they will do right and award justice. We all know the fallibility of man and the despotism of power, and the wisest governments are those which have their checks and balances most accurately adjusted. We do not know Dr. Langer, perhaps he has violated many of the strict rules of propriety. Perhaps he may be unworthy of fellowship with the Scott County Medical Society. But this we do know, that upon the question of his expulsion they were wrong, and displayed great ignorance, and it is unjust to deny him an appeal to what was designed to be the highest court of ethics to be acknowledged by the Medical profession of the United States.

What would be thought in a court of justice of admitting foreign and irrelavent testimony. Dr. Langer had a right to demand trial upon the naked charges brought against him leading to his expulsion, and not upon the question begging, subterfuge seeking after thoughts of his accusers, and most of all, the fear of exposing those who had judged the question, without hearing it, should be denounced.

We would not be understood as adverting to the merits of this difficulty, we speak of the principle involved.

Since however, such a precedent has been established, and such an admission made, we will be surprised if the Clinton County Medical Society does not attempt to blot the Western Reserve College out of existeuce, for county stock is above par while national stock is at a discount. It is an ethical question, why trouble the association with it. Your ethical wish is our ethical law. "Off with his head! So much for Buckingham."

Much time was occupied in discussing the subject of Medical Education, and many of our exchanges seem quite gratified at the result.

We know not what real good was done in this connection, but have no particular objections to any of the resolutions adopted except the 4th, for the fifth is folly when the fourth is inoperative.

We will indicate the grounds of our objections. Many of these sticklers for improvement in Medical Education and a closer watchfulness of Medical Colleges, and who decry the whole system of Medical teaching and deplore the want of preparation on the part of Medical Students of the present day, are such as have good cause to be tender footed upon the subject. Some of them members of immaculate county societies and officers of them, members of the association too, nay more, men who expect to be made State Censors, are not physicians (we speak by the card), have not attended lectures, and it may be also that a few have sought a College indorsement without "entering in at the straight gate" and being denied, of course feel mortified and like the man who was refused admission to the ark calmly say, * * * * * * it's not going to be much of a shower, any way.

Now we do not contend that the possession of a diploma is absolute evidence that the possessor of it is entitled to the confidence of the community,for he may be a practising homeopathist or an advertising pox doctor who sells pills for the prevention of conception, or some infallible liniment vender, or he may never have heard a medical lecture, or seen a cadaver in his life and although his diploma may have received the unction of bad authority, and his Alma Mater be an adopted foundling, still we say, that some line of demarkation is better than none, and common institutions and their aborted offspring soon find their proper level.

We would really wish to see practical reform, but can not agree with those who think it is to be accomplished by breaking down the barriers we now have, however insecure and inefficient they may be.

We can not see any improvement in inviting men to be present at examinations, who should they come, would enter a college or an examination room for the first time.

Things are bad enough as they are, but they would be ridiculously worse under such an arrangement.

University of Pennsylvania.—Dr. W. Pepper has been appointed Professor of Theory and Practice of Medicine in place of Dr. George B. Wood, resigned.

MONTHLY MEDICAL NEWS.

VOL. III. LOUISVILLE, KY., AUGUST, 1860. NO. 2.

LECTURE ON THE SPINAL OR ACCESSORY NERVE OF WILLIS.

BY CLAUDE BERNARD.

Translated for the Louisville Monthly Medical News, by JAMES S. MOREL, M.D., Savannah, Georgia.

SUMMARY—*Functions of the Spinal Nerve—Mode of Destroying the Spinal in Living Animals—Complete Ablation of both Spinals—Discussion and Conclusion of the Experiments—Mechanism of the Ablation of the Voice—Of the Difficulty in Deglutition Consequent to Destruction of the Spinals—Uses of the External Branch of the Spinal.*

(Concluded.)

If we will reflect for an instant, we will perceive that the permanent dilation of the glottis which follows the extirpation of the spinals, is a better reason for the persistence of the respiratory phenomena, as it presents no explanation of the mechanism of aphonia. It would be impossible to infer from our experiments, that the ablation of the spinals destroys the voice by paralysing the constrictor muscles of the larynx, for we will be forced to suppose that the constrictor muscles of that organ are exclusively vocal while the dilators are only muscles of respiration. Such a distinction is inadmissable, for, further on, we will see that the glottis may be closed without, for that reason, producing phonation. Besides this, glottic dilatation which follows the ablation of the spinals without which the continuance of respiration could not be understood, is not a phenomenon which would be necessarily connected with the extinction of the voice; we see that in animals in which the laryngeal nerves are cut, aphonia exists

under diametrically opposite conditions, that is to say, with occlusion of the glottis.

We can not, then, find two orders of muscles corresponding to the two orders of motor nerves, which we have demonstrated as belonging to this organ in the motor laryngeal apparatus. We are obliged to admit that all of the muscles of the larynx are undivided in their action, and we must consider them as forming in their totality only one motor system, which may, however, be made to perform two distinct functions, because the two nervous influences which animate it are separate in their origin and consequently independent in the transmission of their influence. Besides, it is not the paralysis of such or such particular muscles of phonation which it is necessary to look for. After extirpation of the spinals, it is the loss of one of the nervous influences of the laryngeal motor apparatus that is to be ascertained.

We will again remark that this functional diversity of the same muscle, or of a totality of muscles, connected with the plurality of the motor nervous influences which are displayed upon it, is not an isolated fact peculiar only to the muscular apparatus of the larynx; it is a means whose nature often serves to harmonize the functions between themselves, and to economise in some way the motor organs; and without leaving our subject, we perceive that this fact pervades the whole physiological history of the spinal nerve. Every one knows that in ramifying through the sterno-mastoid and trapezius muscles, this nerve animates the muscles already influenced by the motor filaments derived from the cervical plexus. It is well known, and we will soon demonstrate it, that those two orders of nerves are connected with two orders of special motion. The same thing takes place in the larynx; the spinal conveys to the muscles of the larynx a motor faculty distinct from that derived from the pneumogastric, and by this means the laryngeal muscles may perform two distinct functions. In this view, then, as we have said, the larynx is physiologically a double organ, and this is supported by comparative anatomy. In birds the *vocal* larynx is anatomically separated from the *respiratory* larynx.

To sum up: In mammals, and animals with only one larynx, the laryngeal muscular apparatus is a vocal organ when

excited by the spinal nerve, and it is only a respiratory organ when under the influence of the pneumogastric alone. After extirpation of the spinals the voice is abolished, but the larynx does not the less continue to perform the office of an organ of respiration because its muscles are always obedient to the uninterrupted stimulation of the pneumogastric. The glottis, now gaping, remains identically in the same conditions of activity as it is found in a healthy animal which only respires, but so to say corded and reduced to this single function, the larynx is condemned to absolute repose as far as it is an organ of voice, because it has lost the nervous filaments which are appropriated to the glottis for phonation. After the section of the laryngeal nerves, both nervous influences are destroyed at once; the larynx is then completely paralysed, that is to say, struck with death in the accomplishment of these two functions; the glottis remains open as in the dead animal, it neither serves for the act of phonation, or respiration. Death by suffocation, or by impeded respiration, is the normal consequence of this double functional paralysis of the larynx. And if, in old animals the great rigidity of the arytenoid cartilages prevents them from sinking under the pressure of the inspired air, and sometimes permits respiration to be performed, it is a passive phenonenon which explains only these exceptional cases, for the separation due to the solidity of these cartilages through the advance of age depends in no way upon the muscular activity of the larynx, and conseqently no longer merits the name of glottis, as it performs only the office of an open canula adapted to the trachea of an animal which is suffocating.

By placing it in a different point of view, and by admitting the facts which will not be challenged, since they are the results of experiment, some may repel the interpretation that I have given, and maintain that the motor vocal influence in the larynx is not distinct from the motor respiratory influence, and that the results that I have obtained do not belong to the suppression of a special nervous influence, but that they are simply a consequence of a diminution of intensity in the motor power of the larynx. Some say, indeed, that in the normal state the larynx receives a certain proportion of motor filaments, and consequently a perentage of motor power which

has no special destination, but which, by its quantity alone, would be capable of producing at once the respiratory movements which call for less nervous energy, and the vocal actions which, on the contrary, demand a greater muscular and nervous energy. But when we take away the spinal nerves, they will say we destroy a large portion of the motor nervous filaments of the larynx, and, as a consequence, take away from it a large portion of its motor power, which then becoming too feeble is incapable of producing the energetic movements that the act of phonation claims, although it may still permit some respiratory action which demands a less considerable amount of motor power.

This theory, which has been published, is based upon an hypothesis altogether gratuitous: the supposition that more motor power is necessary for the voice than for respiration is then inadmissable. I demand of those who maintain it, to explain this fact that I have observed, and which has since been verified by other physiologists, to-wit: that when the spinals are destroyed, the larynx is parlysed with dilatation without the power of contracting closely, while a section of the vagi or laryngeals paralyses the larynx which contracts closely, but does not possess the power of dilating. It is evident that both of these opposite states can not result from degrees of the same paralysis; if this was so, the ablation of the spinals ought to be the beginning of the occlusion of the glottis, which would then be completed by the section of the pneumogastric, or of the laryngeal nerves.

The admission of two nervous influences, and, as a consequence, two different causes of paralysis, I think would better agree with the facts. In the larynx the spinal is the motor vocal nerve, and the pneumogastric the motor respiratory nerve. The proximity of their origins proves nothing against the difference of function devolving upon each of them. Have not physiological experiments demonstrated that the originary filaments of the pneumogastric arise from only a very limited and very important portion of the medulla oblongata, to which is given the name of *first motor* point of respiratory motion?

I then, adhere to my opinion by concluding with Charles Bell that when an organ receives nerves from many sources,

it is not to accumulate the nervous force there, but it is to carry nervous influences to it." We know that when a healthy animal receives the alimentary bolus into the pharynx there is a reaction of the constrictor muscles; but we know, also, that there is a simultaneous sinking of the epiglottis, and a greater or less occlusion of the opening of the glottis, so that in normal deglutition two distinct muscular actions take place—one by which the food is directed into the digestive tube—the other which closes the larynx, and prevents the entrance of food into the respiratory organs. All of the mechanical functions of the epiglottis are not sufficient to bring on this occlusion so indispensable to the laryngeal opening. Many experiments, as well as a crowd of pathological cases, prove that the epiglottis may be destroyed without sensibly impeding the deglutition of solid food, whence it results that it is principally the displacement of the larynx, and its contraction, rather than the valve of the epiglottis, that prevent the entrance of particles of food into the respiratory passages.

We must remember that it is by the action of the pharyngeal muscles that the superior opening of the larynx is closed, and respiration suspended during the act of deglutition. Experiments are positive in this respect; they demonstrate, indeed, that this contraction of the glottis, which accompanies deglutition, is independent of the muscles of the larynx, since in animals (dogs) in which all of the laryngeal nerves and epiglottis were cut, this occlusion could still be effected, and the passage of food into the glottis prevented.

As a sequence to the facts we have cited, we admit that it is necessary, for the regular performance of deglutition, that the pharygeal muscles should perform a double action, one of which effects the passage of food into the œsophagus, and calls into play the parts concerned in deglutition; the object of the other is to close the larynx and arrest the play of the respiratory passages, so as to prevent the disturbing conflict of these two functions.

By taking away the two spinals, the pharynx loses but one of its motions—the one shutting up the larynx. In the animals we have used in experiments we have seen that deglutition, properly so called, was not abolished. The alimentary bolus, pushed by the constrictor muscles towards the œsopha-

gus, still descended into the stomach; but the inability of the larynx any longer to contract is the reason why the food passes into the trachea; and from this fact we easily understand how this phenomenon occurs, particularly when the animals are irritated, and when we provoke inspiratory movements at the moment deglutition is effected. We have found this impediment to deglutition more marked in rabbits than in cats. This is explained when we reflect that rabbits triturate the herb and reduce it to an alimentary bolus, the particles of which but slightly adhere to each other; whilst cats simply incise their food, and make an alimentary bolus in which the particles adhere, and are less susceptible of separation, and thus of entering into the gaping opening of the larynx. The quantity of chewed herb which enters the trachea of rabbits is sometimes considerable, and this circumstance, at the end of a few days, may bring on difficulty of breathing and pneumonia, which may cause the death of the animal. This complication may be easily arrested if, as we have done, the respiratory passages be displaced by adapting a canula to the trachea and putting a ligature above it.

Anatomy teaches us that the pharynx receives nerves from many sources, and that the spinal sends a very conspicuous branch (the pharyngeal branch) to it. Physiology shows us that during deglutition the pharynx performs two acts—one which in some way opens the œsophagus, another which shuts up the larynx.

Our experiments show us that after extirpation of the spinals the pharyngeal muscles have lost the power of closing the larynx, and preserve that of pushing the alimentary bolus into the œsophagus.

As a rigorous conclusion, it follows that the actions of the pharynx are performed by two distinct nervous motor influences, and that the act of occlusion of the glottis is effected exclusively by the pharyngeal branch.

Now, to give a formula for the general physiological play of the whole of the internal branch of the spinal on the larynx and pharynx, it is necessary to remember that after extirpation of these nerves the laryngeal respiratory passages always remain open, and can no longer contract nor close up for phonation or deglutition; and we will say, that in acting on the

laryngeal muscles the internal branch of the spinals produces contraction of the glottis and tension of the vocal cords, renders respiration sonorous, and changes momentarily the respiratory functions of the larynx, to make it exclusively a vocal organ; that in acting on the laryngeal, the internal branch of the spinal closes the superior opening of the larynx and temporarily intercepts the passage of air through the pharynx, and appropriates this organ exclusively to deglutition.

But if we reflect that in all of these circumstances the internal branch of the spinal acts only as a momentary constrictor of the larynx, we will be convinced that the final end of the nervous influence of the spinals is always the same—that of forming a temporary antagonism to the respiratory function, so as to prevent the organs which are placed in the respiratory passages from performing functions foreign to this phenomenon.

Indeed, that the pharynx may perform its function of deglutition, it is necessary that its respiratory function (an open conductor of air to the lungs) should be abolished. For the larynx to perform its vocal function, it is necessary that its function as an organ of respiration (conductor of air to the lungs) should be momentarily arrested. In all of these different acts they are the same organs which perform them. But the same muscular apparatus which under a given nervous excitement appropriates to itself respiration, may act in a contrary sense, by means of another nervous influence, and direct its activity on another function, which extinguishes or temporarily replaces the first.

Then it is the internal branch of the spinal which conveys to the pharynx and the larynx this last antagonistic nervous influence to the first (respiration). This is the way in which the twofold function of the pharynx and larynx should be understood. In this way are the extinction of voice and difficulty of deglutition explained, which are only the consequence of the respiratory phenomena in the larynx and in the pharynx.

The *shortness* of the *expiration*, the *murmuring*, and the *irregularity in the walk of animals*, still remain to be examined. Before searching for the causes of these last classes of phenomena, we have seen, by experiments, that it is necessary to connect them to the external branch of the spinal, and we will ascertain that these different disturbances depend upon a defect

in the reaction of the spinal on the inspiratory agents of the thorax, a reaction on the thoracic apparatus which is always of the same kind as that exercised on the laryngeal apparatus through the internal branch of the same nerve.

The results which follow having been already observed as a consequence of the total ablation of both spinals, we will give them but a brief notice in our new experiments. We will only remark that the phenomena in question are more evident after the total destruction of the spinal nerves than after the isolated section of the external branch.

First Experiment.—I carefully dissected the external branch of the spinal of a young and healthy dog, and divided it, as nearly as possible as it emerged through the posterior foramen lacerum, taking care to avoid the filaments of the cervical plexus which go to the sterno mastoid muscle. The animal was set at liberty, and the following was observed: There was no change in the conduct of the animal when at rest; deglutition was not affected at all; the voice preserved its clear and normal tone, but his cries were in general shorter, and were often interrupted by inspiratory movements, especially when any one irritated him. The animal seemed to be in the condition of any one affected with shortness of breathing. He also became quickly stifled when forced to run; it was only at this time, when his respiration became accelerated, that some disturbances were observed in the workings of the anterior extremities. The dog was killed the same day for other experiments.

Second Experiment.—The external branches of the spinal alone were taken away from a full grown cat; deglutition remained perfectly free; the spontaneous mewings were as in ordinary, but shorter; those which were the result of pain were very long, and became, in a manner, *socadi*, and followed in their succession the necessity of the respiratory movements. It was difficult to ascertain the irregularity of the movements in the limbs of the animal, only that naturally very savage, he became less so in the cage than when at liberty. After the lapse of two days nothing remarkable was presented in the behavior of this cat.

Third Experiment—on a horse.—The external branch (trachelo dorsal) of the right spinal was cut before its division into

muscular branches. When the animal walked there was a manifest difference between the motions of the right and left members, resulting in a peculiar lameness.

Thus, as anatomy teaches, the external branch of the spinal exercises no influence in the production of vocal sounds, nor in the function of deglutition; but it influences the respiratory motions of the thorax. Then, these motions are necessarily in functional relation with phonation, effort, running, etc. Let us reflect on what takes place in singing, or phonation generally. At first it effects a special constriction of the glottis, which causes the expired air to vibrate and produce a vocal sound (we know that it is a portion of the internal branch which presides over this function, and we will not return to it.) But the voice is not confined to a sonorous expiration alone; vocal sounds, or a song, has duration, intensity, and modulations, a form which is subservient to new conditions taking place in the mechanism of thoracic expiration. The expiratory forces of the thorax are no longer applied in that process only to *relieve promptly* the *lungs* of *the air they contain;* they even act in a *contrary sense; they retain* the *air* for a *certain time;* for the pulmonary organs, as respiratory organs, cease to act for a while to fulfill momentarily the part of an air holder for the vocal apparatus.

The object of simple respiratory expiration and complex vocal expiration being different, bear no resemblance to each other at all. You may become aware of this by standing without support and calmly breathing; you will then remark that inspiration and expiration succeed each other regularly, and continue almost for the same length of time; or, if one is shorter, it will be the expiratory movement.

The sterno mastoid and trapezins muscles do not then visibly contract, although there is a slight elevation and depression of the shoulder which corresponds to the same action of the ribs. Now, if we wish to change the relation of duration which exists between the inspiratory and expiratory act, we will see that it is only with the greatest difficulty that we can extend the limits of ordinary expiratory effort; but if we attempt to speak, or sing, the preceding condition is obtained with the utmost ease, for the expiratory effort has suddenly changed its mechanism, to become vocal. Here, then is what

takes place: the thorax being full of air at the moment when the vocal function of the larynx is about to begin, the sterno mastoid and trapezius muscles contract, in some way seizing the shoulder and the sternum, keep them elevated, and suspend their depression, as well as that of the ribs, during the whole time that the sounds are sent forth; the proof of this is, that as soon as the song ceases the expiration is accomplished, and the shoulders fall on the thorax. While singing, expulsion of the air continues; but instead of its being effected by sudden depression of the shoulders and ribs, as in respiratory expiration, it is sometimes effected by a slow and gradual depression of the thorax (in grave sounds), sometimes by the abdominal muscles (in acute sounds). These contractions of the sterno-mastoid and trapezius muscles, whose office is to suspend the respiratory effort so as to permit the thorax to adapt the column of air expired to the modulations of the voice, are so much the more marked as the laryngeal muscles become more energetic; this is the case with singers whose efforts are to produce the most varied sounds. Every one knows how greatly these muscles and larynx are developed in singers.

But to return to our animals: It will be an easy task to interpret all of these peculiarities which the voice presents. When they are deprived of the spinals, the thorax, as well as the larynx, are simply organs of respiration, and can not be modified so as to perform the office of phonation. The animals are deceived, when they make an effort to cry, by the performance of strong expiratory motions only. When the external branch of the spinal alone has been destroyed, the faculty of producing sound is still preserved, but the thoracic murmur cannot be extended or modulated; hence the shortness of the voice, which is interrupted, and never oversteps the boundary of an ordinary respiratory expiration.

So in the vocal apparatus there are two parts to be noted: 1st, the organ forming sound (the larynx). 2d, the air-holder (the thorax). But what our experiments demonstrate is, that at the moment when the larynx is used for phonation, by the *internal* branch of the spinal, at the same time, through the influence of the external branch, the thorax, strictly speaking, for the instant ceases to act as a respiratory organ, to unite

itself to the vocal apparatus. These two modifications of the larynx and thorax concur in effecting the same object, and they should be associated, as they are derived from the same nervous source.

The sterno-mastoid and trapezius muscles are not antagonistic to the thoracic respiratory movements only in phonation. As such, they still act in other cases, where respiration is arrested, to allow the thorax (becoming immovable) to serve as a fixed point for the different muscles of the shoulder or abdomen, etc. All of these muscular acts which demand for their accomplishment a suspension of respiration, merit the name of *effort*. This may be met with in two distinct ways: When the effort is violent and continued (complete effort), there is a simultaneous action or synergy of the internal and external branches of the spinal to arrest respiration; the larynx is closed by the influence of the pharyngeal muscles, and the sterno-mastoid and trapezius contract energetically to oppose expiration and to keep the thorax filled and dilated as in violent efforts of the abdomen or limbs, etc. If, on the contrary, the muscular act of effort is of short duration, and not very violent, the thorax need not be so immovable; in this case the synchronism in the action of the two branches of the spinal is also no longer necessary; thus in the performance of transient efforts by the upper extremities, the action of the external branch upon the sterno-mastoid and trapezius muscles supports the sternum and sufficiently elevates and fixes the shoulder to suspend for a while the thoracic expiration without the necessity of hermetically sealing the larynx. In deglutition the internal branch of the spinal suspends the glottic expiration without having recourse to the muscles which act in the same way upon the thorax.

We place deglutition in the category of transient efforts, because they can not be effected without stopping respiration; the mechanism of the effort is always opposed to its duration and intensity. Indeed, the effort becomes very evident and complete when deglutition is prolonged, as, for example, in individuals who gulp down their drink.

Thus the first condition of effort is the arrest of respiration; hence our animals which have been deprived of their spinals, having lost the power of arresting the respiration, are

no longer able to make efforts; they are always deceived in their attempts, because in proportion as they desire to suspend, they only accelerate their respiration.

In animals which have no clavicles, a series of muscular acts take place while running, which seem to me to enter into the class of transient efforts. If we examine the inferior insertion of the sterno-mastoid and trapezius muscles in these animals, we find the latter inserted into the scapula as it is in man, but the sterno-mastoid is divided into two separate muscular fascicles, one of which is fixed into the upper portion of the sternum, and the other (the clavicular portion in man) is attached to the humerus. In the horse the sternal portion of the sterno-mastoid forms a distinct muscle (the sterno maxillary), one part being inserted into the sternum, and the other at the angle of the inferior maxilla. When this muscle takes its fixed point above, it can act on the sternum; but when it takes its point below, we admit, with M. Rigot, that it may act in opening the jaw, or if this is fixed, it lowers the head, and produces the movement of a bridled horse. All of these muscles are animated by the external branch of the spinal, and when the head (or the cervical column to which they are also attached above) serves as a fixed point, the muscles coming from it contract together, and their effect is necessarily to carry the sternum and the shoulder upward and forward at the same time that the fore limb is lifted from the ground and thrust forward. In this way the thoracic walls are disengaged for the act of inspiration, when the member is thrown in advance; and as the sternum is fixed the expiration is suspended, until the contraction of all the muscles ceasing, the shoulder and the limb are carried backward. By this mechanism a harmonious connection is established between the movements of the thorax and those of the anterior member, which permits the latter to move with great rapidity on the course without interfering with, or impeding respiration. It will now be understood why, in animals deprived of their spinals, this harmony no longer exists: it produces a stifling sensation, which forces them to run. A characteristic irregularity in the gait of the animal is observed, and is very visible in the horse.

The inferior costal form of respiration which is normal in non-claviculated animals, as M.M. Bean and Maissart have

observed, is sufficient to insure regularity of breathing in ordinary progression. It is, however, when running, that the respiratory movements assume the super-costal type. This, as we have said, tends to establish a harmony between the respiratory motions of the thorax and those of the anterior member, in efforts of very short duration not demanding occlusion of the larynx. Indeed, horses affected with roaring, for which tracheotomy has been performed, are yet fitted for running, and it is only in great muscular efforts that they are found to be slightly embarrassed.

After the destruction of the external branch of the spinal, the sterno-mastoid and trapezius muscles are no longer able to arrest the thoracic respiratory movements and separately they become incapable of making the thorax a fixed point in the effort, and an air-holder in phonation. However, these muscles are not completely paralysed, for if they are laid bare, they are observed to contract in certain movements of the head; and what is most remarkable, they still act as *inspirators* when respiration is mechanically impeded. If we lay bare the sterno-mastoid muscle of a dog or cat, you will notice that when the trachea is moderately compressed, the sterno-mastoid contracts, raises up the sternum, and produces respiration; but this contraction is of very short duration, as is also the inspiration itself. When the pressure of the trachea is taken off, and the animal is made to cry, the sterno-mastoid still contracts vigorously, and keeps the thorax in an elevated position while the cry lasts. But if the spinal of the right side be cut, and the preceding circumstances be reproduced, we will see that during the cry the left sterno-mastoid appears to contract much more strongly, and during the forced respiration, on the contrary, the two sterno-mastoids contract equally, and continue to act as inspirators. It is preferable to cut the origins of the external branch in the cranium, so as not to pull the sterno-mastoids, and to be certain that we have not wounded the filaments of the cervical plexus which are spent upon these muscles. This experiment very clearly proves that the vocal contraction (if it may be so called) of the sterno-mastoid, and the respiratory contraction, are under different nervous influences. Indeed, the ends to be served by them are very distinct; in the one case it is to arrest respiration, in the other it is to assist in its production.

Then we find again this remarkable fact which we have already observed, relative to the muscles of the larynx, to-wit: that the same muscle may perform two opposite physiological acts, according to the nervous influence which excites it.

The example of the sterno-mastoid is even more striking than that of the laryngeal muscles, because it is a large muscle with well-defined insertions, whose action may be clearly defined beforehand. To explain its double action, it is not necessary to seek it by changing its fixed point, for that always remains the same thus it is not in the particular direction of the muscular fires, which may exist in one case and not in another; this would be absurd since all of the muscular fibres have the same directions. But whence comes this double function? It comes simply from the *times* in which the muscle acts. Thus, when the sterno-mastoid acts as an inspirator (under the influence of the cervical plexus) it contracts and lifts up the thorax until the lung is filled with air; then the function is finished, and it relaxes to allow the expiratory muscle to act. When, on the contrary, the sterno-mastoid acts in phonation (under the influence of the spinal) it waits until the thorax is full of air, then it stops in that state; the voice begins and the sterno-mastoid always opposing itself to the other expiratory muscles accompanies the voice while it lasts, and maintains the air in the thorax during the whole time that it is needed for the continuance of the vocal sound; it is one nervous influence succeeding the other. This is the explanation of this singular fact, and which we said could be applied to the muscles of the larynx.

From all that has been said, we might conclude that in the same way as the pharyngeal and laryngeal muscular apparatus, the sterno-mastoid and the trapezius may perform two different functions, because they obey two distinct nervous influences:

1. That they act essentially as inspirators when they receive their influence from the cervical plexus, although their action is only necessary when respiration is difficult.

2. That they arrest respiration, and act antagonistically to the respiratory movements of the thorax, when the external branch of the spinal excites them, and that they are then congeners of a similar action performed by the larynx through the influence of the internal branch of the same nerve.

There is, then, for the functional acts, where respiration should be temporarily arrested, two muscular antagonisms, destined to this effect: one, which may be called the internal, acts always by opening the larynx, and is controlled by the internal branch of the spinal; the other, which may be called the external, and which acts on the thorax, is governed by the external branch of the same nerve. I conceive that this can not be explained in any other way, because the larynx and thorax are animated by continued respiratory movements; and if, for example, at a moment when the thorax shall have been fixed to serve as a point of support to the effort, the larynx had continued to perform its functions as a respiratory organ and *vice versa*, the disorder and want of harmony is readily perceived which such a condition would produce; this our experiments have demonstrated.

Thus, the constriction of the larynx is not sufficient to arrest respiration; it can not alone overcome the respiratory movements of the thorax. An external antagonism, otherwise called auxilary and indispensable action of the external branch of the spinal is necessary. The latter can only become useless, if the thorax by whatever mechanism had remained immovable. This is not a simple conjecture, comparative anatomy proves it. Among birds respiration is performed altogether differently from mammals; they have no real diaphraghm, the lungs are fixed, etc.; but what is most important in our view, is that their thorax, in consequence of its osseous structure, remains almost motionless. It is thus always disposed to serve as a fixed point for the muscular organs which are attached to it, and it does not react upon the lungs for the expulsion of air. Birds, as we have already observed, have no external branch of the spinal.

We now know that all of the remarkable disturbances which ensue upon destruction of the spinal nerves, concentrate only upon the motor or dynamic respiratory apparatus (laryngeal and thoracic motions). But before connecting all of these experiments, so as to deduce from them some general facts, it is necessary to recollect that the respiratory agents (larynx and thorax) in consequence of the two orders of motor nerves which animate them may be found in two very distinct functional conditions in a healthy animal.

Sometimes, as when an animal is in repose or asleep, only one organic function is performed, this is respiration; the gaping larynx yields to the air an easy passage to the lungs; the thorax alternately dilates and contracts, so that the inspiration and expiration, nearly equal, are involuntarily performed, presuming a regular rythm which nothing destroys. Such are the phenomena of simple respiration.

In the other condition which only accompanies wakefulness, and is called the *complex* respiratory state, in opposition to the preceding, are exhibited other phenomena, which, although always produced by means of respiratory agents are nevertheless beyond the point of respiration. Such are phonation, deglutition, effort, etc.

The respiratory agents (the larynx and thorax) possess, then, a double functional end, and it may be truly said, that in the first state, that of simple respiration, these organs belong exclusively to the internal or organic life, while in the second state, called complex respiration, they provisorily disturb their respiratory function to perform other acts of external life. Then it must not be forgotten that it is only to these organs that the spinal nerve distributes its branches and extends its influence.

Now, what has our experiment taught us? It is, that in a state of repose, when simple respiration is performed, the spinals have no part to play, for when our animals are calm or asleep, not the least disturbance is observed in these functions, and it would be impossible to say if they had spinals or not. But when the opposite condition prevails, and when the animal (deprived of the spinal) wants to perform the functions which establish the relations between it and the external world, it finds itself unable to perform all of the acts which demand particular modifications in the respiratory agents. The volition of the animal always shows itself; but it no longer has control over respiration so as to stop or modify it, and to effect phonation, effort, etc., at his desire.

The larynx and thorax are no longer advertised in any way of the acts of external life which pass within and around them; these organs continue to be the agents of simple respiration, and in despite of the animal, continue to perform this function, and can not fulfill any other. When the animal sup-

poses that it is crying, he respires; when he wishes to eat, he respires at the same time; and when he tries to make an effort, his respiration becomes more rapid.

Thus, the active agents of respiration (the muscles which act upon the larynx and thorax) receive two orders of motor nervous influence. In the state of simple respiration, the influence of the spinal upon it is null; this nerve only excites motions which relate to external life, and it is it which presides over all of the changes that take place in the movements of the thorax and larynx, then of complex respiration, such as effort and the voice. In this connection the spinal ought to be considered as the vocal nerve, a nerve of singers' *par excellence*, for without it all modulation of sound becomes impossible.

From all that we have said, we should conclude:

1. That at present it will be difficult to reduce the cranial nerves to the simple type of the rachidian nerves. And in the case now under consideration, it is demonstrated by facts, that the pneumogastric and the spinal, have not the same anatomical and physiological connection that exists in the two roots of a rachidian pair.

2. The pneumogastric nerve is a mixed nerve, which, controls the motor and sensitive organic phenomena of three great functions, to-wit: respiration, circulation, and digestion.

3. But among these functions there is one (respiration) which participates in voluntary or relative life. It has also one nerve more, which is the spinal.

4. The spinal is, then, a *nerve of motion* which controls the movement of the larynx and thorax all the time that these organs are used for phonation, and are applied to acts which extend beyond the point of simple respiration.

In other nerves it is a nerve of *relative life* annexed to the respiratory apparatus, in the same way as the actions over which it presides, the voice, etc., are phenomena of relative life annexed to the function of respiration. Consequently the spinal should not be considered as a nerve of respiration, or accessory to respiration; it always acts in a contrary sense; its constant object is to suspend the accomplishment of this organic function, while it adapts the larynx and thorax to the phenomena of phonation, effect, etc. If any one wishes to

give a name to this nerve which would correspond to the mechanism of its influence, it ought rather to be called the *nerve antagonistic to respiration*. With similar uses the spinal forms a nerve entirely exceptional in the economy. And this ought not to surprise us, since it appertains to a function (respiration) which is itself exceptional, inasmuch as the motor organs which perform it (the larynx and thorax) may in turn lend themselves to relative life, or remain the organs of organic life. We have seen that after the destruction of the spinals, the respiratory apparatus descends again into organic life, and the voiceless animals now appear to have no more control of their larynx or thorax than they have over the functions of the heart or stomach.

MONTHLY MEDICAL SUMMARY.

By E. D. Forbe, M.D., O'Bannon's, Jefferson county, Ky.

DENGUE.

C. Powers, M.D., in the Boston Medical Journal, reports an epidemic of this singular and painful disease now prevalent in Moravia, N. Y.

It very seldom migrates from its more Southerly residence, though it has for several years been, little by little, extending its precincts Northward. It might, therefore, be well for physicians to be on the lookout for it, and familiarize themselves with its history, nature, and management.

ACUPRESSURE SUCCESSFULLY PRACTICED IN NEW YORK HOSPITAL.

Dr. Van Buren, after an amputation of the fore arm, used "three common Berlin wire wove pins, about two and a half inches in length, and similar to shawl pins; one each for the radial ulnar and interosseous arteries, the latter being secured by a needle passed directly through the interoneous space, but not appearing in the face of the stump, and compressing the vessel against the outer border of the radius, the other arteries being secured. The extremities of each needle being in the cutaneous surface of the palmar flesh as the stem of a flower is fastened to the lapel of a coat. No ligatures were applied.

The stump was closed by silver wire sutures; some slight oozing occurred the same evening from the outer angle of the wound, but ceased spontaneously forty-eight hours after the operation; but moderate swelling having ensued, the needles were withdrawn, and on the eighth day the sutures were also removed. Union by first intention was the result. Patient discharged, cured, within twenty-two or twenty-three days from the operation."—*American Medical Times.*

Now that the question, "Can a malposition of the fœtus in utero be detected and corrected by external manipulation prior to labor?" is exciting general discussion, the readers of the News will be obliged to us for copying the following article, entire, from the American Medical Times:

BELLEVUE HOSPITAL.

Malposition of Fœtus detected by External Manipulation during Labor—Cephalic Version by the same Means—Successful.

The following interesting and highly practical questions in obstetrical science, have recently been agitated among those devoted to that branch of medicine:

1. Can a mal-position of the fœtus in utero be detected by external manipulation prior to labor?
2. Can such mal-position be rectified prior to labor by external manipulation?

Some of the leading professors of obstetrics in this country have taken strong grounds in the negative, and several not only denying the possibility of detecting and correcting mal-positions prior to labor, but even questioning the professional honesty of the practitioner who should endeavor to determine by external examination, prior to labor, whether a mal-position existed.

The following case, which occurred in Bellevue Hospital, a few days since, under the care of Dr. Barker, is a most important contribution to this subject. We copy the notes of the case, furnished us by Dr. E. B. Barrett, House Physician:

Mary Ann ——, aged 17, born in Ireland, was admitted to the Waiting wards of the Bellevue Hospital, March 19, 1860, in her first pregnancy. On examination, the uterine tumor was very conical, projecting markedly to the right, as well as forward, triangular in shape, with its transverse diameter greatest. The os uteri was dilated to the size of a quarter of a dollar, and dilatable. The membranes were very full, and projected strongly from the os, and so tense were they that no

part of the child could be felt from danger of rupturing them. On the following morning, as the pains had somewhat exhausted the patient from their teasing character, and as little or no progress was being made, an opiate was administered, from which the patient was enabled to obtain some sleep, awaking much refreshed at 12 M. (the 4th.) The pains now increased in force and frequency, but with no result, save the further dilatation of the os, which was now between two and three inches in diameter. On vaginal examination no part of the child could be felt without rupturing the membranes; by palpation the previous conjecture, viz., that a transverse presentation existed, was rendered nearly certain.

Dr. Barker came to pay his daily visit at this juncture, and concurring in the opinion that the child presented transversely, decided on immediate interference. Accordingly the patient was brought under the influence of chloroform. Dr. Barker again examined the tumor more carefully, both by palpation and "per vaginam." Through the external walls the head could be felt in the left iliac fossa, above the pubis. The pelvic extremity of the fœtus was in the right iliac fossa, and the curve of the dorsum could be traced strongly projecting forwards. By a vaginal examination the os was found dilated to the diameter of about three inches, soft and dilatable, with a very large and projecting bag of waters. The presenting part of the fœtus could not easily be felt through the bag of waters, and no force was used for fear of rupturing the membranes; but the deduction, from the external and vaginal examination, was, that the right shoulder was the presenting part at the superior strait. Dr. Barker therefore decided to attempt cephalic version, in preference to the ordinary method, and he at once proceeded to operate, in the presence of several members of the medical staff of the hospital. The patient being brought to the edge of the bed, in the approved position, he first manipulated by attempting to elevate the pelvis of the fœtus with his left hand, and to depress the head with the right, acting only when it was found that the uterus was not contracting. Finding that he had essentially changed the position of the fœtus, the right hand of an assistant was placed to make strong pressure over the left iliac fossa; he (Dr. B.) still elevating the pelvis of the fœtus with his left, introduced into the vagina two fingers of the right, and during the time of uterine contraction ruptured the membranes, when the waters escaped with great force and abundance. The head could now be felt in the superior strait in the *left occipito* iliac position. The administration of chloroform was now discontinued, in the hope that the uterus would complete the delivery unassisted. Slight pains, with little progress, followed

for fifteen minutes, and as the fœtal heart was beating somewhat feebly, it was deemed necessary to apply the forceps. The forceps being applied, a male child, weighing eight pounds, was extracted in a partially asphyxiated condition. Respiration was established in a short time, however, and it is now a perfectly healthy child. The placenta came away in five minutes, with no more than the usual amount of hemorrhage: the perineum was not lacerated, and the patient but little more prostrated than is usual after natural labor. The patient proceeded to a rapid convalescence, with no unfavorable symptom, notwithstanding the prevalence of an epidemic of puerperal fever in the hospital at the time of her confinement.

In his clinical remarks upon the case, Dr. Barker contended that he had demonstrated beyond cavil—

1. That a mal-position of the fœtus in utero can be detected by external manipulation during labor. Auscultation furnished but slight assistance, and the results of an internal examination were entirely negative. The important fact, however, worthy of special notice is, that the position of the fœtus could only be determined when the uterus was in a quiescent state. It follows, therefore, if the most favorable time for detecting the position of the fœtus is in the interval between contractions, that a mal-position can be made out by external manipulation prior to labor; and if the position can be discovered in the interval of the pains of labor, it can also be done one, or two, or even many days before labor.

2. This case demonstrates the possibility of performing version by external manipulation during labor, and, as version by the hand introduced into the uterus was attempted in the absence of pain, he thought this case equally proved that version by external manipulation is possible before labor. But to have the fœtus remain in its new position it would be necessary to rupture the membranes and induce labor, in order to secure the engagement of the head in the pelvic cavity.

James M. Minor, M.D., Attending Surgeon in Brooklyn City Hospital, reports four cases of Varicose Veins, and one of Aneurism, cured by the injection of the per-sulphate of iron, one of which (as it is quite an interesting case, and the cure complete), it gives us pleasure to copy:

"J. T——, aged 22, American, admitted, under Dr. Minor, October 24, 1850, with varicose condition of scrotal veins of left side. Has enjoyed very good general health. For six months past has suffered much pain from distended veins of

scrotum, extending through spermatic cord to inguinal canal of that side, and also in the testicle. Can obtain no relief except in recumbent posture. Ordered cathartic. Suffers with languor and debility from involuntary seminal emissions, after which the pain is much aggravated.

"October 28th, injected four drops of a solution of per-sulphate of iron (four parts of water to one per-sulphate) with Pravat's syringe, as modified by Tiemann. Patient was made to stand erect in order to fill the veins, and make them more distinctly prominent, a necessary precaution in such loose tissues as are found in that region. He fainted, but was soon restored by the recumbent posture. The operation scarcely caused any pain, either at the time, or subsequently. A firm coagulum was formed in thirty seconds. Ordered cloths dipped in water to the part, and the recumbent posture.

"November 3rd—The clot formed by per-sulph. ferri. gives indications of coming away by ulceration. Has felt less pain in cord since operation. Nor does he feel any pain at point of puncture.

"February 6th—Clot came away last night, having a healthy granulating surface. 26th—discharged, cured."

The following is his mode of operation:

"A Pravat's syringe, as modified by Mr. Tiemann, is the instrument used. This is a very small syringe of vulcanized rubber, having a small (almost capillary) canula screwed to its lower end. This canula is cut obliquely at its entremity somewhat after the manner of a pen, ending in a sharp point. The piston-rod is graduated to drops, to admit of the use of any quantity, however small. The quantity of the solution intended to be used is then drawn in through the canula, which is plunged into the vein, the patient standing erect. The vein is firmly held by the fingers of an assistant above and below the puncture. The pressure on the cardiac side should be sufficiently firm to prevent the upward current, otherwise portions of the clot might be carried into the circulation." *American Medical Times.*

The foregoing case is one of special interest to the person who makes the abstract, from the fact that it confirms him in the diagnosis of a case recently presented in the person of a most worthy agriculturist of this State, about which conflict-

ing opinions have been entertained by careful and competent medical gentlemen, among whom may be enumerated one of the most distinguished surgeons of the Mississippi valley. In his case a varicose condition of the scrotum and spermatic cord, and epidydimis has existed for several years. During the whole time of its presence he has had inordinate venereal appetite, and has indulged it to a marvelous extent. For the last two years he has been troubled with frequent involuntary seminal emissions and painful pirapisms. While in the erect position, he has constant uneasiness in the testicle of the affected side, and frequent sharp pains in the preputial extremity of the urethra. He has undergone sounding for vesicle calculus, been treated for neuralgia of the bladder, and is now under treatment, by the surgeon alluded to, for prostatic disease, although he has never been submitted to an examination of that organ. My own decided conviction is, that if his surgeon will obliterate the diseased veins, either by Dr. Minor's, or some other method, he will have the gratification of seeing this worthy gentleman, now miserable, restored to health, and become the recipient of his unending gratitude.

Dr. Shute, of Indiana, in the July No. of the Cincinnati Lancet and Observer, favors us with an article upon the Delivery of the Placenta, particularly in Abortions in Early Pregnancy. He concurs with Chailly, Ramsbotham, Meigs, and all other writers who have gone before him, in the propriety of its speedy delivery, but differs from them wide as the poles in regard to the practicability of its accomplishment. Meigs says: "A good many cases of abortion in the early stage, as from the sixth to the tenth week, have fallen under my notice, in which the uterus was unable to expel the remains of the ovum, and in which I could not extract it." In reference to this, Dr. Shute says: "How remarkable, that the Corypheus of obstetricians in this country should fail in what can be performed in any instance!" "My method," he says, "is to remove the placenta with the index finger, on which I always keep a tolerably long nail for the purpose of separating the after-birth from the uterus. The nail should not be too long, or it will not be sufficiently firm, and may bend back-

wards. Push the uterus as low down in the pelvis as possible, and retain it there with the left hand, while you introduce the index finger of the right hand into its cavity, and pull off the placenta and remove it. On account of having short fingers, I am often obliged to introduce my hand into the vagina; but I always reach the fundus of the uterus without difficulty." He concludes by saying: "This is a safe and sure method; and if the fact, that the placenta can always be extracted, be impressed upon the minds of young obstetricians, abortions will be robbed of their terror."

Dr. William Johnson, of White House, N. J., M. Brauvois, M. Gauchet, Dr. Harris, and others, are of the opinion that uva ursi is an uterine excitant of value, and may be often substituted for the ergot of rye with advantage to mother and child. Dr. Johnson directs a strong infusion (half an ounce of the leaves to a pint of water) in the dose of a fluid ounce every ten minutes until the desired effect is produced." *Journal of Materia Medica.*

Facts like the following, though not new, are richly entitled to the space they occupy in our periodicals, and should be oftener reported. Dr. Fountain, of Davenport, Iowa, says: Three weeks after confinement, a lady was attacked with uterine neuralgia. It resisted opiates in large doses. The suffering became so extreme, that she verged upon insanity. He ordered half a dram dose of muriate of ammonia, to be repeated every hour. After the third dose she became entirely easy, and had no return of the pain.

He also gives a case of abundant lactation, protracted throughout the term of three years, in a woman prematurely delivered of a still-born child. She had resorted to all the means she could devise, or her friends recommend, unavailingly. He directed—

℞ Ext. Belladonna
Ung: Glycerine, aa. ʒij. M.

To be rubbed freely over the breasts, and they to be covered with oil silk. Within a few days the secretion was arrested, and did not return.—*Ibid.*

(From the American Journal of Science and Arts.)

PROF. AGASSIZ ON THE ORIGIN OF SPECIES.

Contributions to the Natural History of the United States. *By* L. Agassiz.

The third volume of this work, now in press, will appear shortly. We copy from the advance sheets the following paragraphs relating to the origin of species, which has lately attracted much attention, in consequence of the publication of Darwin's book on that subject:

INDIVIDUALITY AND SPECIFIC DIFFERENCES AMONG ACALEPHS.

The morphological phenomena discussed in the preceding section naturally lead to a consideration of individuality, and of the extent and importance of specific differences among the Acalephs. A few years ago, the prevailing opinion among naturalists was, that while genera, families, orders, classes, and any other more or less comprehensive divisions among animals were artificial devices of science to facilitate our studies, species alone had a real existence in nature. Whether the views I have presented in the first volume of this work (p. 163), where I showed that species do not exist in any different sense from genera, families, etc., have had any thing to do with the change which seems to have been brought about upon this point among scientific men, is not for me to say; but whatever be the cause, it is certainly true that, at the present day, the number of naturalists who deny the real existence of species is greatly increased. Darwin, in his recent work on the Origin of Species, has also done much to shake the belief in the real existence of species, but the views he advocates are entirely at variance with those I have attempted to establish. For many years past I have lost no opportunity of urging the idea that, while species have no material existence, they yet exist as categories of thought, in the same way as genera, families, orders, classes, and branches of the animal kingdom. Darwin's fundamental idea, on the contrary, is, that species, genera, families, orders, classes, and any other kind of more or less comprehensive divisions among animals do not exist at all, and are altogether artificial, differing from one another only in degree, all having originated from a successive differentiation of a primordial organic form, undergoing successively such changes as would at first produce a variety of species; then genera, as the difference became more extensive and deeper; then families, as the gap widened still further between the groups, until in the end all that diversity was produced which has existed or exists now. Far from agreeing with these views, I have, on the contrary, taken the ground that all the

natural divisions in the animal kingdom are primarily distinct, founded upon different categories of characters, and that all exist in the same way, that is, as categories of thought, embodied in individual living forms. I have attempted to show that branches in the animal kingdom are founded upon different plans of structure, and for that very reason have embraced from the beginning representatives between which there could be no community of origin; that classes are founded upon different modes of execution of these plans, and therefore they also embrace representatives which could have no community of origin; that orders represent the different degrees of complication in the mode of execution of each class, and therefore embrace representatives which could not have a community of origin any more than the members of different classes or branches; that families are founded upon different patterns of form, and embrace representatives equally independent in their origin; that genera are founded upon ultimate peculiarities of structure, embracing representatives, which, from the very nature of their peculiarities could have no community of origin; and that finally, species are based upon relations and proportions that exclude, as much as all the preceding distinctions, the idea of a common descent.

As the community of characters among the beings belonging to these different categories arise from the intellectual connection which shows them to be categories of thought, they can not be the result of a gradual material differentiation of the objects themselves. The argument on which these views are founded may be summed up in the following few words: Species, genera, families, etc., exist as thoughts, individuals as facts. It is presented at full length in the first volume of this work (pp. 137–168), where I have shown that individuals alone have a definite material existence, and that they are, for the time being, the bearers not only of specific characteristics, but of all the natural features in which animal life is displayed in all its diversity; individuality being, in fact, the great mystery of organic life.

Since the arguments presented by Darwin in favor of a universal derivation from one primary form, of all the peculiarities existing now among living beings have not made the slightest impression on my mind, nor modified in any way the views I have already propounded, I may fairly refer the reader to the paragraphs alluded to above as containing sufficient evidence of their correctness, and I will here only add a single argument, which seems to leave the question where I have placed it.

It seems to me that there is much confusion of ideas in the general statement of the variability of species so often repeated

lately. If species do not exist at all, as the supporters of the transmutation theory maintain, how can they vary? and if individuals alone exist, how can the differences which may be observed among them prove the variability of species? The fact seems to me to be that while species are based upon definite relations among individuals which differ in various ways among themselves, each individual, as a distinct being, has a definite course to run from the time of its first formation to the end of its existence, during which it never loses its identity nor changes its individuality, nor its relations to other individuals belonging to the same species, but preserves all the categories of relationship which constitute specific, generic, or family affinity, or any other kind or degree of affinity. *To prove that species vary it should be proved that individuals born from common ancestors change the different categories of relationship which they bore primitively to one another.* While all that has thus far been shown is, that there exists a considerable difference among individuals of one and the same species. This may be new to those who have looked upon every individual picked up at random, as affording the means of describing satisfactorily any species; but no naturalist who has studied carefully any of the species now best known, can have failed to perceive that it requires extensive series of specimens accurately to describe a species, and that the more complete such series are, the more precise appear the limits which separate species. Surely the aim of science can not be to furnish amateur zoologists or collectors, a *recipe* for a ready identification of any chance specimen that may fall into their hands. And the difficulties with which we may meet in attempting to characterise species do not afford the first indication that species do not exist at all, as long as most of them can be distinguished, as such, almost at first sight. I foresee that some convert to the transmutation creed will at once object that the facility with which species may be distinguished is no evidence that they were not derived from other species. It may be so. But as long as no fact is adduced to show that any one well-known species among the many thousands that are buried in the whole series of fossiliferous rocks, is actually the parent of any one of the species now living, such arguments can have no weight; and thus far the supporters of the transmutation theory have failed to produce any such facts. Instead of facts we are treated with marvelous bear, cuckoo, and other stories Credat Judaeus Apella!

Had Dr. Darwin or his followers furnished a single fact to show that individuals change, in the course of time, in such a manner as to produce at last species different from those known before, the state of the case might be different. But

it stands recorded now as before, that the animals known to the ancients are still in existence, exhibiting to this day the characters they exhibited of old. The geological record, even with all its imperfections, exaggerated to distortion, tells now, what it has told from the beginning, that the supposed intermediate forms between the species of different geological periods are imaginary beings, called up merely in support of a fanciful theory. The origin of all the diversity among living beings remains a mystery as totally unexplained as if the book of Mr. Darwin had never been written, for no theory unsupported by fact, however plausible it may appear, can be admitted in science.

It seems generally admitted that the work of Darwin is particularly remarkable for the fairness with which he presents the facts adverse to his views. It may be so; but I confess that it has made a very different impression upon me. I have been more forcibly struck by his inability to perceive when the facts are fatal to his argument, than by any thing else in the whole work. His chapter on the Geological Record, in particular, appears to me, from beginning to end, as a series of illogical deductions and misrepresentations of the modern results of Geology and Palæontology. I do not intend to argue here, one by one, the questions he has discussed. Such arguments end too often in special pleading, and any one familiar with the subject may readily perceive where the truth lies by confronting his assertions with the geological record itself. But since the question at issue is chiefly to be settled by palæontological evidence, and I have devoted the greater part of my life to the special study of the fossils, I wish to record my protest against his mode of treating this part of the subject. Not only does Darwin never perceive when the facts are fatal to his views, but when he has succeeded by an ingenious circumlocution in overleaping the facts, he would have us believe that he has lessened their importance or changed their meaning. He would thus have us believe that there have been periods during which all that had taken place during other periods was destroyed, and this solely to explain the absence of intermediate forms between the fossils found in successive deposits, for the origin of which he looks to those missing links; while every recent progress in Geology shows more and more fully how gradual and successive all the deposits have been which form the crust of our earth. He would have us believe that entire faunæ have disappeared before those were preserved, the remains of which are found in the lowest fossiliferous strata; when we find every where non-fossiliferous strata below those that contain the oldest fossils now known. It is true he explains their absence by the supposi-

tion that they were too delicate to be preserved; but any animals from which Crinoids, Brachiopods, Cephalopods, and Trilobites could arise, must have been sufficiently similar to them to have left, at least, traces of their presence in the lowest non-fossiliferous rocks, had they ever existed at all. He would have us believe that the oldest organisms that existed were simple cells, or something like the lowest living beings now in existence; when such highly organized animals as Trilobites and Orthoceratites are among the oldest known. He would have us believe that these lowest first-born became extinct in consequence of the gradual advantage some of their more favored descendants gained over the majority of their predecessors; when there exists now, and have existed at all periods in past history, as large a proportion of more simply organized beings, as of more favored types, and when such types as Lingula were among the lowest Silurian fossils, and are alive at the present day. He would have us believe that each new species originated in consequence of some slight change in those that preceded; when every geological formation teems with types that did not exist before. He would have us believe that animals and plants became gradually more and more numerous; when most species appear in myriads of individuals, in the first bed in which they are found. He would have us believe that animals disappear gradually; when they are as common in the uppermost bed in which they occur as in the lowest, or any intermediate bed. Species appear suddenly and disappear suddenly in successive strata. This is the fact proclaimed by Palæontology; they neither increase successively in number, nor do they gradually dwindle down; none of the fossil remains thus far observed show signs of a gradual improvement or of a slow decay. He would have us believe that geological deposits took place during the periods of subsidence; when it can be proved that the whole continent of North America is formed of beds which were deposited during a series of successive upheavals. I quote North America in preference to any other part of the world, because the evidence is so complete here that it can only be overlooked by those who may mistake subsidence for the general shrinkage of the earth's surface in consequence of the cooling of its mass. In this part of the globe, fossils are as common along the successive shores of the rising deposits of the Silurian system, as anywhere along our beaches; and each of these successive shores extends from the Atlantic States to the foot of the Rocky Mountains. The evidence goes even further; each of these successive sets of beds of the Silurian system contains peculiar fossils, neither found in the beds above nor in the beds below, and between them there are no immediate forms.

And yet Darwin affirms that "the littoral and sub-littoral deposits are continually worn away, as soon as they are brought up by the slow and gradual rising of the land within the grinding action of the coast waves." Origin of Species, p. 290. He would also have us believe that the most perfect organs of the body of animals are the product of gradual improvement, when eyes as perfect as those of the Trilobites are preserved with the remains of these oldest animals. He would have us believe that it required millions of years to effect any one of these changes; when far more extraordinary transformations are daily going on, under our eyes, in the shortest periods of time, during the growth of animals. He would have us to believe that animals acquire their instincts gradually; when even those that never see their parents, perform at birth the same acts, in the same way, as their progenitors. He would have us believe that the geographical distribution of animals is the result of accidental transfers; when most species are so narrowly confined within the limits of their natural range, that even slight changes in their external relations may cause their death. And all these, and many other calls upon our credulity, are coolly made in the face of an amount of precise information, readily accessible, which would overwhelm any one who does not place his opinions above the records of an age eminently characterized for its industry, and during which, that information was laboriously accumulated by crowds of faithful laborers.

It would be superfluous to discuss in detail the arguments by which Mr. Darwin attempts to explain the diversity among animals. Suffice it to say, that he has lost sight of the most striking of the features, and the one which pervades the whole, namely, that there runs throughout Nature unmistakable evidence of thought, corresponding to the mental operations of our own mind, and therefore intelligible to us as thinking beings; and unaccountable on any other basis than that they owe their existence to the working of intelligence; and no theory that overlooks this element can be true to nature.

There are naturalists who seem to look upon the idea of creation, that is, a manifestation of an intellectual power by material means, as a kind of bigotry; forgetting, no doubt, that whenever they carry out a thought of their own, they do something akin to creating, unless they look upon their own elucubrations as something in which their individuality is not concerned, but arising without an intervention of their mind, in consequence of the working of some "bundles of forces," about which they know nothing themselves. And yet such men are ready to admit that matter is omnipotent, and consider a disbelief in the omnipotence of matter as tantamount

to imbecility; for, what is the assumed power of matter to produce all finite beings, but Omnipotence? And what is the outcry raised against those who can not admit it, but an insinuation that they are *non compos?* The book of Mr. Darwin is free of all such uncharitable sentiments towards his fellow-laborers in the field of science; nevertheless his mistake lies in a similar assumption that the most complicated system of combined thoughts can be the result of accidental causes; for he ought to know, as every physicist will concede, that all the influences to which he would ascribe the origin of species are accidental in their very nature, and he must know, as every naturalist familiar with the modern progress of science does know, that the organized beings which live now, and have lived in former geological periods, constitute an organic whole, intelligibly and methodically combined in all its parts. As a zoologist he must know in particular, that the animal kingdom is built upon four different plans of structure, and that the reproduction and growth of animals takes place according to four different modes of development, and that unless it is shown that these four plans of structure, and these four modes of development, are transmutable one into the other, no transmutation theory can account for the origin of species. The fallacy of Mr. Darwin's theory of the origin of species by means of natural selection, may be traced in the first few pages of his book, where he overlooks the difference between the voluntary and deliberate acts of selection applied methodically by man to the breeding of domesticated animals and the growing of cultivated plants, and the chance influences which may affect animals and plants in the state of nature. To call these influences "natural selections," is a misnomer which will not alter the conditions under which they may produce the desired results. Selection implies design; the powers to which Darwin refers the order of species, can design nothing. Selection is no doubt the essential principle on which the raising of breeds is founded, and the subject of breeds is presented in its true light by Dr. Darwin; but this process of raising breeds by the selection of favorable subjects, is in no way similar to that which regulates specific differences. Nothing is more remote from the truth than the attempted parallelism between the breeds of domesticated animals and the species of wild ones. Did there exist such a parallelism, as Darwin maintains, the difference among the domesticated breeds should be akin to the differences among wild species, and afford a clue to determine their relative degree of affinity by a comparison with the pedigrees of well-known domesticated races. Again, if there were any such parallelism, the distinctive characteristics of different breeds should be akin to the differences which

exists between fossil species of earlier periods and those of the same genera now living. Now let any one familiar with the fossil species of the genera Bos and Canis, compare them with the races of our cattle and of our dogs, and he will find no correspondence whatever between them; for the simple reason that they do not owe their existence to the same causes. It must therefore be distinctly stated that Mr. Darwin has failed to establish a connection between the mode of raising domesticated breeds, and the cause or causes to which wild animals owe their specific differences.

It is true, Mr. Darwin states that the close affinity existing among animals can only be explained by a community of descent, and he goes so far as to represent these affinities as evidence of such a genealogical relationship; but I apprehend that the meaning of the words he uses has misled him into the belief that he had found the clue to phenomena which he does not even seem correctly to understand. There is nothing parallel between the relations of animals belonging to the same genus or the same family, and the relations between the progeny of common ancestors. In the one case we have the result of a physiological law regulating reproduction, and in other affinities which no observation has thus far shown to be in any way connected with reproduction. The most closely allied species of the same genus of the different species of closely allied genera, or the different genera of one and the same natural family, embrace representatives which at some period or other of their growth resemble one another more closely than the nearest blood relations; and yet we know that they are only stages of development of different species distinct from one another at every period of their life. The embryo of our common fresh water turtle, *Chrysemis picta*, and the embryo of our snapping turtle, *Chelydra serpentina*, resemble one another far more than the different species of Chrysemis in their adult state, and yet not a single fact can be adduced to show that any one egg of an animal has ever produced an individual of any species but its own. A young snake resembles a young turtle or a young bird much more than any two species of snakes resemble one another; and yet they go on reproducing their kinds, and nothing but their kinds. So that no degree of affinity, however close, can, in the present state of our science, be urged as exhibiting any evidence of community of descent, while the power that imparted all their peculiarities to the primitive eggs of all the species now living side by side, could also impart similar peculiarity with similar relations, and all degrees of relationship, to any number of other species that have existed. Until, therefore, it can be shown that any one species had the ability

to delegate such specified peculiarities and relations to any other species or set of species, it is not logical to assume that such a power is inherent in any animal, or that it constitutes part of its nature.* We must look to the original power that imparted life to the first being for the origin of all other beings, however mysterious and inaccessible the modes by which all this diversity has been produced may remain for us. The production of a plausible explanation is no explanation at all, if it does not cover the whole ground.

All attempts to explain the origin of species may be brought under two categories: 1st, some naturalists admitting that all organized beings are created, that is to say, endowed from the beginning of their existence with all their characteristics; while 2nd, others assume that they arise spontaneously. This classification of the different theories of the origin of species, may appear objectionable to the supporters of the transmutation theory; but I can perceive no essential difference between their views and the old idea that animals may have arisen spontaneously. They differ only in the modes by which the spontaneous appearance is assumed to be effected; some believe that physical agents may so influence organized beings as to modify them—this is the view of DeMaillet and the Vestiges of Creation: others believe that the organized beings themselves change in consequence of their own acts, by changing their mode of life, etc., this is the view of Lamarck; others still assume that animals and plants tend necessarily to improve, in consequence of the struggle for life, in which the favored races are supposed to survive; this is the view lately propounded by Darwin. I believe these theories will, in the end, all share the fate of the theory of spontaneous generations so called, as the facts of nature shall be confronted more closely with their theoretical assumptions. The theories of DeMaillet, Oken, and Lamarck are already abandoned by those who have adopted the transmutation theory of Darwin; and unless Darwin and his followers succeed in showing that the struggle for life tends to something beyond favoring the

*The difficulty of ascertaining the natural limits of some species, and the mistakes made by naturalists when describing individual peculiarities as specific, has nothing to do with the question of the origin of species, and yet Darwin places great weight, in support of his theory, upon the differences which exist among naturalists in their views of species. Some of the metals are difficult to distinguish, and have frequently been mistaken, and the specific differences of some may be questioned; but what could that have to do with the question of the origin of metals, in the minds of those who may doubt the original difference of metals? Nothing more than the blunders of some naturalists in identifying species with the origin of species of animals and plants. The great mischief in our science now lies in the self-complacent confidence with which certain zoologists look upon a few insignificant lines, called diagnoses, which they have the presumption to offer as characteristics of species, or, what is still worse, as checks upon others to secure to themselves a nominal priority. Such a treatment of scientific subjects is unworthy of our age.

existence of certain individuals over that of other individuals, they will soon find that they are following a shadow. The assertion of Darwin, which has crept into the title of his work, is, that favored *races* are preserved, while all his facts go only to substantiate the assertion, that favored *individuals* have a better chance in the struggle for life than others. But who has ever overlooked the fact that myriads of individuals of every species constantly die before coming to maturity? What ought to be shown, if the transmutation theory is to stand, is that these favored individuals diverge from their specific type, and neither Darwin nor any body else has furnished a single fact to show that they go on diverging. The criterion of a true theory consists in the facility with which it accounts for facts accumulated in the course of long-continued investigations and for which the existing theories afforded no explanation. It can certainly not be said that Darwin's theory will stand by that test. It would be easy to invent other theories that might account for the diversity of species quite as well, if not better than Darwin's preservation of the favored races. The difficulty would only be to prove that they agree with the facts of Nature. It might be assumed, for instance, that any one primary being contained the possibilities of all those that have followed, in the same manner as the egg of any animal possesses all the elements of the full-grown individual; but this would only remove the difficulty one step further back. It would tell us nothing about the nature of the operation by which the change is introduced. Since the knowledge we now have, that similar metamorphoses go on in the eggs of all living beings has not yet put us on the track of the forces by which the changes they undergo are brought about, it is not likely that by mere guesses we shall arrive at any satisfactory explanation of the very origin of these beings themselves.

Whatever views are correct concerning the origin of species, one thing is certain, that as long as they exist they continue to produce generation after generation, individuals which differ fron one another only in such peculiarities as relate to their individuality. The great defect in Darwin's treatment of the subject of species lies in the total absence of any statement respecting the features that constitute individuality. Surely, if individuals may vary within the limits assumed by Darwin, he was bound first to show that individuality does not consist of a sum of hereditary characteristics, combined with variable elements, not necessarily transmitted in their integrity, but only of variable elements. That the latter is not the case, stands recorded in every accurate monograph of all the types of the animal kingdom upon which minute embryological investigations have been made. It is known, that every indi-

vidual egg undergoes a series of definite changes before it reaches its mature condition; that every germ formed in the egg passes through a series of metamorphoses before it assumes the structural features of the adult; that in this development the differences of sex may very early become distinct; and that all this is accomplished in a comparatively very short time, extremely short, indeed, in comparison, to the immeasurable periods required by Darwin's theory to produce any change among species; and yet all this takes place without any deviation from the original type of the species, though under circumstances which would seem most unfavorable to the maintenance of the type. Whatever minor differences may exist between the products of this succession of generations are all *individual peculiarities*, in no way connected with the essential features of the species, and therefore as transient as the individuals; while the specific characters are for ever fixed. A single example will prove this. All the robins of North America now living have been for a short time in existence; not one of them was alive a century ago, when Linnæus for the first time made known that species under the name of Turdus migratorius, and not one of the specimens observed by Linnæus and his cotemporaries was alive when the Pilgrims of the Mayflower first set foot upon the Rock of Plymouth. Where was the species at these different periods, and where is it now? Certainly nowhere but in the individuals alive for the time being; but not in any single one of them, for that one must be either a male or a female, and not the species; not in a pair of them, for the species exhibits its peculiarities in its mode of breeding, in its nest, in its eggs, in its young, as much as in the appearance of the adult; not in all the individuals of any particular district, for the geographical distribution of a species over its whole area, forms also part of its specific characters.* A species is only known when its whole history has been ascertained, and that history is recorded in the life of individuals through successive generations. The same kind of argument might be adduced from every existing species, and with still greater force by a reference to those species already known to the ancients.

Let it not be objected that the individuals of successive generations have presented marked differences among themselves; for these differences, with all the monstrosities that may have occurred, during these countless generations, have

*We are so much accustomed to see animals reproducing themselves, generation after generation, that the fact no longer attracts our attention, and the mystery involved in it no longer excites our admiration. But there is certainly no more marvellous law in all nature than that which regulates this regular succession. And upon this law the maintenance of species depends; for observation teaches us that all that is not individual peculiarity is unceasingly and integrally reproduced, while all that constitutes individuality, as such, constantly disappears.

passed away with the individuals, as individual peculiarities, and the specific characteristics alone have been preserved, together with all that distinguishes the genus, the family, the order, the class, and the branch to which the individual belonged. Moreover all this has been maintained through a succession of repeated changes, amounting in each individual to the whole range of transformations, through which an individual passes, from the time it is individualized as an egg, to the time it is itself capable of reproducing its kind, and, perhaps, with all the intervening phases of an unequal production of males and females, of sterile individuals, of dwarfs, of giants, etc., during which there were millions of chances for a deviation from the type. Does this not prove that while individuals are perishable, they transmit, generation after generation, all that is specific or generic, or, in one word, *typical* in them, to the exclusion of every *individual peculiarity* which passes away with them, and that, therefore, while individuals alone have a material existence, species, genera, families, orders, classes, and branches of the animal kingdom exist only as categories of thought in the Supreme Intelligence, but as such have as truly an independent existence and are as unvarying as thought itself after it has once been expressed.

Returning, after this digression, to the question of individuality among Acalephs, we meet here phenomena far more complicated than among higher animals. Individuality, as far as it depends upon material isolation, is complete and absolute in all the higher animals, and there maintained by generic transmission, generation after generation. Individuality, in that sense, exists only in comparatively few of the Radiates. Among Acalephs it is ascertained only for the Ctenophoræ and some Discophoræ. In others, the individuals born from eggs end by dividing into a number of distinct individuals. In others still, the successive individuals derived from a primary one, remain connected to form compound communities. We must, therefore, distinguish different kinds and different degrees of individuality, and may call *hereditary individuality* that kind of independent existence manifested in the successive evolutions of a single egg, producing a single individual, as is observed in all the higher animals. We may call *derivative* or *consecutive individuality* that kind of independence resulting from an individualization of parts of the product of a single egg. We have derivative individuals among the Nudibranchiate Mollusks, whose eggs produce singly, by a process of complete segmentation, several independent individuals. We observe a similar phenomenon among those Acalephs the young of which (Scyphostoma) ends in producing, by transverse division (Strobila), a number of inde-

pendent free Medusæ (Ephyræ). We have it also among the Hydroids which produce free Medusæ. Next, we must distinguish *secondary individuality*, which is inherent to those individuals arising as buds from other individuals, and remaining connected with them. This condition prevails in all the immovable Polyparia and Hydraria, and I say intentionally in the immovable ones; for, in the movable communities, such as Renilla, Pennatula, etc., among Polyps, and all the Siphonophoræ among Acalephs, we must still further distinguish another kind of individuality, which I know not how to call properly, unless the name of *complex individuality* may be applied to it. In complex individuality a new element is introduced, that is not noticeable in the former case. The individuals of the community are not only connected together, but, under given circumstances, they act together as if they were one individual, while at the same time each individual may perform acts of its own.

As to the specific differences observed among Acalephs, there is as great a diversity between them as between their individuals. In some types of this class the species are very uniform; all the individuals belonging to one and the same species resembling one another very closely, and exhibiting hardly any difference among themselves, except such as arises from age. This identity of the individuals of one and the same species is particularly striking among the Ctenophoræ. In this order there are not even sexual differences among the individuals, as they are all hermaphrodites. In the Discophoræ proper a somewhat greater diversity prevails, and the differences between the sexes is quite striking in some genera, as, for instance, in Aurelia. Next there occur frequent deviations, among them, in the normal number of their parts; their body consisting frequently of one or two spheromeres more than usual, sometimes, even, of double normal number, or of a few less. And yet, year after year, the same Discophoræ reappear upon our shores, with the same range of differences among their individuals. Among Hydroids polymorphism prevails to a greater or less extent, besides the differences arising from sex. Few species have only one kind of individuals. Mostly the cycle of individual differences embraces two distinct types of individuals, one recalling the peculiarities of common Hydræ, the other those of Medusæ; but even the Hydra type of one and the same species may exhibit more or less diversity, there being frequently two kinds of Hydræ united in one and the same community, and sometimes even a larger number of heterogeneous Hydræ. And this is equally true, though to a less extent, of the Medusa type. Yet among Siphonophoræ there are generally at

least two kinds of Medusæ in one and the same community. But notwithstanding this polymorphism among the individuals of one and the same community, genetically connected together, each successive generation reproduces the same kinds of heterogeneous individuals, and nothing but individuals linked together in the same way. Surely we have here a much greater diversity of individuals, born one from the other, than is exhibited by the most diversified breeds of our domesticated animals; and yet all these heterogeneous individuals remain true to their species, in one case as in the other, and do not afford the slightest evidence of a transmutation of species.

Would the supporters of the fanciful theories lately propounded, only extend their studies a little beyond the range of domesticated animals, would they investigate the alternate generations of the Acaleps, the extraordinary modes of development of the Helminth, the reproduction of the Salpæ, etc., they would soon learn that there are, in the world, far more astonishing phenomena, strictly circumscribed between the natural limits of unvarying species, than the slight differences produced by the intervention of men, among domesticated animals, and, perhaps, cease to be so confident as they seem to be, that these differences are trustworthy indications of the variability of species. For my own part, I must emphatically declare that I do not know a single fact tending to show that species do vary in any way, while it is true that the individuals of one and the same species are more or less polymorphous. The circumstance, that naturalists may find it difficult to trace the natural limits of any one particular species, or the mistakes they may make in their attempts to distinguish them, has nothing whatsoever to do with the question of their origin.

There is another feature of the species of Acalephs which deserves particularly to be noticed. All these animals are periodical in their appearance, and last for a short period, in their perfect state of development. In our latitude most Medusæ make their appearance, as Ephyræ, early in the spring, and rapidly enlarge to their full size. In September and October they lay their eggs and disappear; the young hatched from the eggs move about, as Planulæ, for a short time, and then become attached, as Scyphostomes, and pass the winter in undergoing their Strobila metamorphosis. The Ctenophoræ appear also very early, and lay their eggs in the autumn, passing the winter as young, and growing to their full size towards the beginning of the summer. Among the Hydroids there is more diversity in their periodicity. Hydraria are found all the year round; but the Medusæ buds, the free Medusæ, and

the Medusaria make their appearance in different seasons, in different species. Some bring forth Medusæ buds and free Medusæ or Medusaria during winter; others, and in our latitude this is the case with by far the largest number of the Hydroids, produce their Medusæ brood in the spring; a few breed later, in the summer or in the autumn; so that notwithstanding the regularity of their periodical return, Acalephs may be studied, in some condition or other, during the whole year.

When considering Individuality and Specific Differences, as manifested in the class of Acalephs, I have taken an opportunity of showing, upon general grounds how futile the arguments are upon which the theory of transmutation of species is founded. Having now shown that that class is circumscribed within definite limits, I may be permitted to add here a few more objections to that theory, based chiefly upon special grounds, connected, with the characteristics of classes. If there is any thing striking in the features which distinguish classes, it is the definiteness of their structural peculiarities; and this definiteness goes on increasing, with new and additional qualifications, as we pass from the class characters to those which mark the orders, the families, the genera, and the species. Granting, for the sake of argument, that organized beings living at a later period may have originated by a gradual change of those of earlier periods, one of the most characteristic features of all organized beings remains totally unexplained by the various theories brought forward to explain that change; the definiteness of their respective groups, be they ever so comprehensive, or ever so limited, combined with the greatest inequality in their numeric relations. There exist a few thousand Mammalia and Reptiles, and at least three times their number of Birds and Fishes. There may be twenty thousand Mollusks; but there are over a hundred thousand Insects, and only a few thousand Radiates. And yet the limits of the class of Insects are as well defined as those of any other class, with the only exception of the class of Birds which is unquestionably the most definite in its natural boundaries. Now the supporters of the transmutation theory may shape their views in whatever way they please to suit the requirement of the theory, instead of building the theory upon the facts of Nature, they never can make it appear that the definiteness of the characters of the class of Birds is the result of a common descent of all Birds, for the first Bird must have been brother or cousin to some other animal that was not a Bird, since there are other animals besides Birds in this world, to no one of which any bird bears as close a relation as it bears to its own class. The same argu-

ment applies to every other class; and as to the facts, they are fatal to such an assumption, for Geology teaches us that among the oldest inhabitants of our globe known, there are representatives of nine distinct classes of animals, which by no possibility can be descendants of one another, since they are cotemporaneous.

The same line of argument and the same class of facts forbid the assumption that either the representatives of one and the same order, or those of one of the same family, or those of one of the same genus should be considered as lineal descendants of a common stock; for orders, families and genera are based upon different categories of characters, and not upon more or less extensive characters of the same kind, as I have shown years ago (Vol. I, pp. 150–163), and numbers of different kinds of representatives of these various groups, make their appearance simultaneously in all the successive geological periods. There appear together Corals and Echinoderms of different families and of different genera in each successive geological formation, and this is equally true for Bryozoa, Brachiopods and Lamellibranchiata, for Trilobites and the other Crustacea, in fact for the representatives of all the classes of the animal kingdom, making due allowance for the period of the first appearance of each; and at all times and in all classes the representatives of these different kinds of groups are found to present the same definiteness in their characteristics and limitation. Were the transmutation theory true, the geological record should exhibit an uninterrupted succession of types blending gradually into one another. The fact is, that, throughout all geological times, each period is characterized by definite specific types, belonging to definite genera, and these to definite families, referable to definite orders, constituting definite classes and definite branches, built upon definite plans. Until the facts of Nature are shown to have been mistaken by those who have collected them, and that they have a different meaning from that now generally assigned to them, I shall therefore consider the transmutation theory as a scientific mistake, untrue in its facts, unscientific in its methods, and mischievous in its tendency.

Cambridge, *June* 30, 1860.

Pharmaceutical Department.

By THOS. E. JENKINS, Pharmaceutist.

THE ABUSE OF OPIUM.

The habitual use of the preparations of opium as a means of intoxication, is an evil, the extent of which is scarcely appreciated by the profession, or by the community at large. There are shops in the outskirts of our large cities in which the sale of Laudanum forms one of the principal items of business. These peddle it out to every poor victim who can procure a few pennies to purchase a temporary relief from imaginary pains. So common is this article of trade that even little children are furnished with it, on application, as if it were the most harmless drug. It is sold in these shops at half the price maintained by respectable establishments; and there can be no doubt that its intoxicating effects are sought by many, who use it is a substitute for alcoholic drinks. Individuals who would shrink from the habitual use of spirituous liquors, employ this *medicine* under a false persuasion that it is useful or necessary to allay some symptom of a chronic disease, until they become victims to one of the worst of habits. There is scarcely an apothecary in our large cities who can not relate instances of Opium intoxication that have come under his own notice, and been served at his own counter. Females afflicted with chronic disease, widows bereft of their earthly support, lovers disappointed in their hopes, flee to this powerful drug, either in its crude form, in the form of tincture, or some of its salts, to relieve their pain of body and mind, or to take the place of another repudiated stimulant. Such, too, is the morbid taste of these, that they think they require the soporific influence of Opium to fill up the measure of their life enjoyment; just as the drunkard is wedded to his cup, or the tobacco-user to the weed.

The prevalence of this kind of indulgence is liable to increase in proportion as legal restrictions are placed upon the

sale of alcoholic stimulants. By the so-called liquor laws, as enacted in some of the States, the responsibility of the sale of spirituous liquors is designed to be thrown into the hands of the Druggist and Apothecary; with him rests in great measure the necessary discrimination as to the sale of these powerful agents; he must endeavor to draw the line between the purchaser who seeks them for an indulgence in their intoxicating effects, and one who will apply them to legitimate uses in disease. That this is a difficult duty can not be denied, and its observance implies the exercise of great care and tact, as well as of moral courage.

Who would sell an ounce of Laudanum to an applicant whose intention to commit suicide was apparent? And yet how often is it sold to individuals who are only protracting their suicide by the demoralizing and dissipating habit of taking it in smaller and gradually increasing quantities?

The responsibility for many cases of habitual intoxication, both with alcohol and opium, rests with the physicians. Almost every apothecary of large experience has met with instances, in which the parties attribute their habit to the use of these agents, for the first time, under the advice of a physician, by whose direction it has been persisted in, in some chronic case, till it has become almost impossible to desist from the indulgence.

A habit among laudanum-takers, which evinces the care with which the practice is concealed from the apothecary, has fallen under my notice: A small, well-washed vial is presented at the counter, and laudanum demanded; it is furnished, and labelled by the seller. The buyer consumes it all in a few hours, or days at most; he removes the label, cleanses the vial again, and presents it to another store, with the same request; and after it is used, he goes to a third, and so on perhaps to a dozen stores, till he comes to the first again, in a few weeks after his original presentation; he may not be recognized at either place till months, or even years have rolled away, and his shrivelling skin, lemon-colored complexion, contracted pupil, and tremulous limbs mark him as a confirmed victim of this dangerous habit. The apothecary having found out his customer, remonstrates; but conscious of the fact that he will buy somewhere, and that acute pain and

misery will be the consequence of abstinence, feels, perhaps, that it is justifiable, under the circumstances, to sell; and thus the days and weeks go on, till the habit and its victim alike disappear.

The quantity of laudanum that may be taken varies with different individuals. Those habituated to it consume from a few teaspoonsful to an ounce or more per day. A medical friend informed me that a child less than two years old came under his observation, to whom was administered a desert-spoonful of laudanum per diem to keep it quiet, while the mother was engaged at her daily toil; this, of course, was the result of previous habit, originating in a small beginning.

Persons who have been addicted to the use of ardent spirits, are, perhaps, more apt to use laudanum in preference to the crude drug, or any of the salts of morphia. The cheapness of the tincture over the salts is a strong reason with others. We know of a lady whose bill for sulphate of morphia, during a single year, was *ninety dollars*, which, if we estimate it at the usual price, and take the daily average of the quantity consumed, would exhibit the enormous consumption of over 20 grains a day. And yet the victim of this slavery is able to attend, in some measure, to her daily pursuits, and has already attained middle age, without any evidence of organic disease. Another lady, suffering from a uterine complaint, who had been for years in the habit of using opium, at first by the advice of a physician, and subsequently from an impression of its value to her, continued it in gradually increasing doses, till the daily consumption of the gum and the tincture, taken alternately, amounted to many grains of the former and half an ounce of the latter. In this case the patient was bedridden, and suffered a great deal of pain when the system was not directly influenced by the medicine.

A degree of restlessness and nervous irritability, amounting almost to spasm, when not under the effects of the drug, are characteristic in almost every aggravated case.

One colored woman, advanced in life, who had been advised, many years before, by her physician, to employ laudanum, for the relief of the painful symptoms of a chronic disease, was known for several years to take invariably f ℥iss of laudanum, which was purchased daily as required.

A lady of my acquaintance, who, I believe, since recovered entirely from the habit, took for years a half grain powder of sulphate of morphia daily, sometimes perhaps twice a day.

On one occasion, a man proposed to purchase at the counter a fluid-ounce vial of laudanum, and when the price of it was demanded, immediately swallowed the whole, as was supposed for the purpose of suicide. He was afterward seen in the streets apparently in his usual health.

Dr. Garrod, of Philadelphia, relates a case of a young man who took one dram of Smyrna opium night and morning, and frequently from an ounce to an ounce and a half of laudanum in addition.

We are informed of an instance of a lady advanced to her three score years and ten, who, from fear of the pains of death, from day to day, kept herself under the influence of this narcotic. Such was the morbid mental influence which kept her unhappy in the anticipation of a result which has not occurred.

The moral responsibility connected with the question of prescribing and dispensing opium, may be greater than has been hitherto acknowledged; and the few remarks here presented are designed to awaken an interest among those who by position and pursuits are best qualified to exercise a wholesome influence upon its abuse.—*From Parrish's Pharm.*

OPIUM.

A correspondent of the London Chemist, from Smyrna, June 30, 1860, says: "This narcotic is now being collected. The crop this year is unusually large, and is expected to reach 3,600 baskets of about 140 pounds each, the average being 2,500 baskets. The average consumption of different countries is as follows:

"England,	400	baskets.
"America,	900	"
"China,	1000	"
"Java,	500	"
"Borneo,	100	"
"France,	80	"
"Germany,	60	"

"The above figures, however, vary considerably according to price, particularly with regard to the exports to China."

CHALYBEATE COD LIVER OIL.

Dr. Jeannel, in the *Reperloire de Pharmacie*, for June, 1860, gives a formula for a useful combination of oxide of iron with cod liver oil. It is as follows:

℞ Cod Liver Oil, - - - 8 ounces.
Distilled Water, - - - - 8 ounces.
Carbonate of Soda (cryst.) - 3 drams.
Sulphate of Iron (cryst.), 3 drams, 2 scrup.

Dissolve the soda and iron salts separately in the water, mix and immediately add to the oil. The mixture is to be kept in an open, wide-mouth bottle, and repeatedly shaken for eight days, after which the oil is to be separated from the watery solution of sulphate of soda and filtered; subsequently it should be kept fron contact with the air. It contains about one per cent. of oxide of iron in solution.

IMPROVED TASTE TO COD LIVER AND CASTOR OILS.

Cod liver or castor oil shaken up with an equal volume of the water distilled off the leaves of the wild cherry tree, in a manner similar to that directed in the Edinburgh or Dublin Pharmacopœia for cherry laurel water, and left to rest forty-eight hours before separation, acquires by this simple operation an extremely sweet perfume and agreeable taste of almonds; the taste remains as long as the digestion lasts. Oil flavored in this way could be taken by many patients who reject it in its natural state. Castor oil is not affected in its purgative action by this process.

ON ELECTRICITY AS A MEANS OF DIAGNOSIS IN CASES OF PARALYSIS.

The following extract from a work lately published by Dr. Althaus on "Medicinal Electricity," gives shortly and clearly our knowledge, at the present time, on the vexed question of electricity as a means of diagnosis in cases of paralysis:

"We have thus arrived at the result that the muscles of paralysed limbs may present three different conditions when subjected to the action of the electric current, and that this

may enable us, in certain cases, to form the correct diagnosis of the paralysing lesion.

"1. If the excitability of the muscles—or rather the polarity of the motor nerves—be *increased* in the paralysed limb, the case is one of *cerebral paralysis*, connected with an irritative lesion within the cranium.

"2. If the excitability of the muscles be nearly or totally *lost*, we have, in all probability, either *lead palsy*, or *traumatic paralysis;* but it must be kept in mind that certain hysterical and rheumatic palsies of long standing, present the same peculiarity; and that it may also be found in cases of disease of the brain and cord.

"3. *If paralysed muscles respond readily to the electric current*, there is no lead in the system, nor is the connection between the motor nerves of the paralysed muscles and the cord interrupted; but if such cases are of *long standing*, they are due to *brain disease;* and if they are of *recent standing*, they are generally instances of *hysterical*, *rheumatic*, or *spontaneous* paralysis." *Dublin Quarterly Journal.*

OXALATE OF CERIUM.

The preparations of Cerium are said to be used with advantage in cases of general chronic intestinal eruptions, a peculiar and intractable form of disease, for which arsenic and nitrate of silver are generally prescribed, and when these remedies have failed, cerium compounds have been tried with marked success. In irritable dyspepsia, with gastrodynia and pyrosis, and in chronic vomiting, its exhibition is attended with satisfactory results. In the vomiting of pregnancy prompt relief is offered in most cases. It is a good tonic and a useful substitute for the salts of silver, bismuth and hydrocyanic acid. Over silver it has this advantage, that it can be persevered in without fear of discoloration of the skin. The preparations in use are the oxalate and nitrate of the protoxide of cerium, of which only the latter is soluble in water. The dose of the oxalate is from one grain to five or ten as the nature of the case or occasion may require.—*Drug. Circ.*

Hemorrhage from leech bites may be promptly arrested by the application of a few coatings of good collodion.

CYLINDERS OF TANNIN IN CERTAIN AFFECTIONS OF THE UTERUS.

M. Becquerel's formula is as follows:

℞ Tannin, - - - - - - 4 parts.
Tragacanth (powd.), - - - 1 part.
Bread-crumb, q. s. to give proper consistence.

Form this mass into pencils, slightly conical, ¼ of an inch in diameter at base, and 1¼ inch in length.

To use them, the neck of the uterus is exposed by means of the speculum; one of the cylinders is introduced by means of forceps into the os tincæ, and is then pushed into the cavity of the uterus, and secured there by means of a plug of lint soaked with a concentrated solution of tannin. Once in position, the pencil softens and dissolves, and modifies the tissues with which it is in contact. At the end of twelve hours, the plug of lint is withdrawn by means of a thread attached to it. *Bull de Therap.*

PERCHLORIDE OF IRON IN EPISTAXIS, ETC.

Undiluted solution of perchloride of iron injected into the nostrils, it is said, will stop the bleeding, when all other remedies fail, in this common but occasionally alarming affection. If the first application should not prove a lasting remedy, it may be repeated.

In obstinate bleeding, from punctured or incised tonsils, the application of this powerful and efficacious styptic has stopped the hemorrhage when other means have failed.

OPIATED COLCHICUM WINE—EISENMANN'S DROPS.

This remedy, which has gained such a wonderful reputation in Europe for the relief of acute articular rheumatism, rheumatic affections of the mucous membranes, muscular rheumatism, rheumatic neuralgia, etc., is made after Dr. Eisenmann's own receipt, which is as follows:

℞ Tincturæ Opii, - - - - ℥ij.
Vini Colchici Sem. (Ph. Bor.), - - ℥iss.
M. S. dose, 20 drops three times a day.

Incompatibles.—Alcoholic tinctures, spirits, sweet spirits of nitre, or preparations containing alcohol in any degree of concentration, should not be associated in prescriptions with mucilage of acacia, or compounds containing gums or gummy matters, they are chemically incompatible.

Dr. Peraire, of Bordeaux, asserts that he has found a new salt, which he has employed with success in the treatment of intermittent fevers when sulphate of quinia has failed. This salt is Urate of Quinia.

Creosote, or its analogue, carbolic acid, is doubtless the antiseptic agent in the late highly recommended deodorant preparation of coal tar and plaster of Paris.

ABSTRACTS FROM FOREIGN JOURNALS.

NEW METHOD OF EFFECTING THE RADICAL CURE OF HERNIA.

Mr. John Wood read before the Royal Medico-Chirurgical Society (Feb. 28, 1860,) a description of this operation. He commenced by giving a brief sketch of the anatomy of the inguinal region. The peculiarities of structure of the parts concerned in inguinal hernia, of which especial advantage is taken in the operation proposed and practised by the author, are:

1. The mobility and sliding power of the skin in the groin, owing to the synovial character and loose areolar meshes of the deep layer of superficial fascia.

2. The total absence of fat from the areolar tissue of the scrotum, its density, elasticity, toughness, and great vascularity enabling the surgeon to invaginate it into the inguinal canal, to retain it there by stitches, and cause it permanently to adhere to its sides and to the cord.

3. The protection afforded to the peritoneum and vessels (epigastric and circumflex iliac) by the intervention of the fascia transversalis, and its connection with the deep surface of Poupart's ligament.

4. The formation by the conjoined tendon of the internal oblique and transversalis muscles, and triangular ligament of the greater portion of the posterior wall of the canal, and the

feasibility of raising the former by the finger passed into the canal behind the lower edge of the internal oblique muscle, so as to pass a needle through it and the internal pillar of the external abdominal ring together.

The author then stated that the methods respectively practised by Ragg, Bonnet, Gerdy, and more lately by Wutzer, of Bonne, and Rothenmunde, of Munich, most frequently fail in producing a permanent cure chiefly by their not obtaining a hold upon the posterior wall of the canal, and their securing only the anterior portion of the fold produced by invagination, leaving the posterior half of the fold ready for the reception of a fresh portion of the intestine. The objections to the introduction of a hard dilating plug into the invaginated fold of skin and its retention, by Wutzer's method, are as follows:

That the skin and fasciæ intervening in two layers between the compressing hard surfaces and the serous laminæ of the invaginated sac, ward off from them in a great measure the effect intended, namely, that of adhesive inflammation: while the absence of the counter-pressure behind the posterior fold renders the dilating force of the plug almost nugatory, unless sufficient expanding power to cause sloughing be employed, to the great distress, not to say danger, of the patient. The dilating action of the plug upon the canal and external ring leaves the latter in a worse condition than before in case of the failure of the operation. The principle of plugging up a dilatable aperture like the inguinal opening is surely a false one. The invaginated skin invariably descends when the consolidation is observed, the latter being temporary only in its duration.

The principle of the author's operation is directly opposite to that of dilatation, namely, that of drawing together and compressing the anterior and posterior walls of the canal in its whole length, and their union by the adhesive process with the invaginated fascia of the scrotum, which is detached from the skin and transplanted into the canal, the skin being left to adhere below to the approximated margins of the external abdominal ring. By this means the posterior wall of the inguinal canal is made to act as a valve to prevent any future descent of the bowel, shutting up the superior opening by becoming united to the anterior wall through the medium of the scrotal fascia, which thus affords a very highly organized and vascular connective tissue between the tendinous surfaces, which it would be very difficult to cause to adhere together otherwise. The fascial invagination becomes likewise firmly adherent to the spermatic cord. This continues to be effective even when the temporary effusion of lymph is reabsorbed.

THE OPERATION.

This consists:

1. In detaching the scrotal fascia from the skin over the lowest part of the hernial protrusion with a tenotomy-knife, and then invaginating the facia into the canal with the forefinger.

2. In passing a strong, well-curved needle, fixed in a handle, armed with a stout, thick thread, and guided by the finger, through three points in the canal, viz., the conjoined tendon and the triangular fascia (forming the posterior wall), and the external pillar of the ring close to Poupart's ligament (forming the anterior wall of the canal). The ends of the ligature are left in the two former punctures, and a central loop in the latter, passing through the pillars of the external ring, and through the same aperture in the skin of the groin. This may readily be done by sliding upon the adjacent aponeurosis.

3. A cylindrical or flattened compress of glass or boxwood, two inches and a half long by one inch wide, is tied firmly upon the axis of the canal by passing the ends of the ligature through the loop, and tying over the compress. Before tightening the ligature, the surgeon should satisfy himself, by passing the forefinger through the external ring, that the ligatures draw upon the posterior wall. The opening in the scrotum should be tucked well up to, but not within, the external ring. In recent cases of hernia, in which the sac is small and possesses an intimate vascular connection with the peritoneum, and a very slight one with the cord, it may be pushed back into the superior opening, and the ligature applied altogether external to and without puncturing the sac, thus dininishing very much the chances of peritoneal inflammation. But in old and large herniæ the sac has a more intimate vascular connection with the scrotum and cord, and constitutes, as it were, a separate structure, distinct from the peritoneum. In these cases the sac is necessarily invaginated with the fascia, and the ligatures pass through it. In these the inflammation set up in the sac is much less liable to spread into the abdominal cavity, especially when the upper orifice is closed by the ligature. In a large sac the adhesive process is necessary to complete obliteration of the canal, and to prevent future complications. The compress is removed from the fourth to the seventh day, according to the degree of action set up. The ligatures may be left in a week or two longer, to act as conductors for the discharges, and to keep up consolidating action as long as may be desirable. When the sac is punctured, serous fluid flows from the wound in greater or less quantity during the first three or four days.

The author called attention to the action of the rectus

muscle upon the inguinal canal through the conjoined tendon, in drawing backwards the posterior wall of the hernial canal, thus aiding the dilating action of the protruding bowel in the production and growth of the hernia. The effect of the ligatures and consequent adhesions in his operation directly counteracts this action of the rectus. He considers that the first tendency to oblique inguinal hernia, so often hereditary, is owing to deficient development of the lower fibres of the internal oblique producing an imperfect covering to the internal ring. In some of the cases operated on, he has succeeded in supplementing this deficiency by passing the scrotal fascia well up in front of the internal abdominal ring, and securing it to Poupart's ligament in that position. He considers that the chief source of failure in the performance of his operation; especially in large and old cases, is in not securing a hold upon the posterior wall. By simply attaching the fascia to the pillars of the external ring, drawing the latter together, the hernia, though prevented for a time from descending into the scrotum, still occupies the canal, and will, sooner or later, again dilate the external ring, unless constantly bolstered up by a truss. The closing of the external ring by the lower ligatures, in this operation, contributes much, however, to secure in its new position in the canal the transplanted fascia. In small cases of direct hernia the closure or obliteration of the external ring only may be effective in producing a cure, if care be taken to obtain a hold with the inner end of the ligature upon the triangular fascia covering the border of the rectus, immediately behind the opening of the external ring. In noticing the objections to the plan, the author showed that, by properly protecting the point of the needle with the finger, and keeping in front of the fascia transversalis, all danger of wounding the epigastric and circumflex iliac vessels or the bowel was guarded against. The fear of peritonitis is avoided in recent cases (in which it is most to be dreaded) by not puncturing the sac at all, but closing up the tendinous opening external to it. In old cases, adhesive action may be set up in the sac without fear of its spreading to the peritoneum, as the results of numerous cases have shown. The objections made to the limited incision into the skin of the scrotum (which is little more than a puncture) he considers to be puerile. Its advantages in permitting the escape of discharges are evident. Full reports of fifteen cases of hernia (all inguinal) were appended to the paper. One of the cases was a boy of eight years of age; the ages of the others ranged from fifteen to fifty-four and fifty-eight years. One was a female with bubonocele; the rest were males. Three were cases of direct, the rest of oblique hernia. Thirteen were scrotal; four of large

size, and three with very large and lax internal openings. Two were congenital, and two complicated with varicocele (cured also by the operation). In only one case were the symptoms at all severe, or gave suspicion of peritonitis. In this case the patient was in King's College Hospital eight weeks, the symptoms were produced by burrowing of matter between the oblique muscles, following a diarrhea then prevalent in the hospital (in June last). The patient made an excellent cure, was treated entirely without truss, and was one of the cases shown to the society. The hernia had a very large internal opening, and the subject was cachectic and ill-nourished before the operation. In one other case the patient was in bed a month; in another there was partial sloughing of the sac, which was a large and long one, with a very pendulous scrotum, and a large varicocele. This case was treated also entirely without truss, and both hernia and varicocele were cured in eighteen days. The duration of treatment in the rest of the cases varied from nine to twenty-one days. Eight were treated entirely without truss. Thirteen are good and persistent cures, and have remained firm ever since, extending over the following periods of time: one (the first), very nearly two years (this case was published in the Lancet of May 29, 1858); another, one year; two, ten months; four, nine months; three, eight months; one, two months. Three of the cases had been before operated on by Wutzer's and Ragg's methods; one case was operated on twice; one is doubtful; one was reruptured by indiscreet and early hard lifting without truss. Six cases of cure were exhibited by the author to the Fellows of the Society. Of these, four had been treated entirely without truss, and all had been well, and some severely, tested by lifting and heavy labor. The first case (operated on nearly two years ago) was among those exhibited. No difference whatever was apparent between the groins of the two sides. One had been cured in a year, three in nine months, and one in eight months. One of those treated without truss was congenital, in a young man aged twenty years; another was of five years' standing, in a man aged fifty-eight. The rest were of eighteen, sixteen, and three months' standing respectively. All were scrotal hernia, and two direct. Two had chronic bronchitis (at times severe) after the operation, and one during the progress of the cure. The paper was illustrated by diagrams, to which the author directed the attention of the Fellows.—*American Journal of Medical Sciences.*

RESULTS OF AMPUTATIONS OBSERVED AT CONSTANTINOPLE DURING THE CRIMEAN WAR.

M. Salleron was in charge of the Dolma-Bagtche Hospital at Constantinople, which he represents as of faulty construction and deficient in hygienic appliances. Any mischief which would have resulted from these circumstances alone was augmented by the unavoidable overcrowding of its wards with the wounded soldiers.

The immediate object of the author's paper is to give an account of the amputations performed and treated under these painful circumstances, and especially to point out the greater amount of mortality that attended secondary amputations. He selects the period from the 1st of May to the 1st of November, 1855, as being that during which the comparisons he desires to institute may be best made. During it, 2,753 gunshot-wounds were admitted, of which more than one-half were of a very severe character. Of the 2,753 patients, 2,009 were either discharged, or more often transferred to France for ulterior treatment, and 744 died. After great engagements, the subjects of amputation were usually evacuated upon Constantinople as soon as possible, arriving there three or four days after the performance of the operations, with the stumps, as regards dressing, bandages, and cleanliness, in a most unsatisfactory condition. These operations and those performed in the trenches, are entered in the hospital registers as immediate amputations, the secondary ones being those performed afterwards at the hospital itself. The bulk of these latter were also performed from five to ten days after the accident. The total number of amputations was 639—*i. e.* 490 amputations in continuity, and 149 disarticulations. Of the 639, 419 were primary operations, furnishing 221 recoveries and 198 deaths; and 220 were secondary operations, furnishing 73 recoveries and 147 deaths. Thus, among the 639 cases there were 249 recoveries and 345 deaths, the primary operations yielding more than a half of cures, and the secondary operations yielding but a third.

M. Salleron next examines into the immediate causes of this great mortality after amputation—a result so opposite to that which he and the other French surgeons had been accustomed to in Algeria, where amputations succeed very well. Omitting causes which only operated on a few cases, we find that of the 345 deaths, 65 resulted from gangrene with emphysema, 45 from hospital gangrene, and 228 from purulent infection.

GANGRENE WITH EMPHYSEMA.

The author met with gangrene under two forms—the *œdc-*

matous or mild form, and what he terms the *emphysematous or instantaneous* form. No case of the former proved fatal, but rapid death in 65 instances of the latter; 46 of these had been amputations in continuity, and 19 disarticulations. Among 220 amputations performed in the hospital, 36 cases of this form of gangrene occurred; while among 419 performed in the Crimea, only 29 cases occurred. Those about to be attacked seldom properly rallied after the operation, and were the subjects of great nervous irritation. The attack itself was quite sudden, the limb became rapidly and immensely distended, and soon after blackened, the general symptoms undergoing frightful aggravation. It was not, indeed, peculiar to persons who had been operated upon, as it proved in some of those suffering from wounds rapidly fatal. The progress of the disease was always rapid and continuous, no kind of temporary suspension of its course ever being observed, and its mean duration in the 65 cases was from twenty-five to thirty hours. The chief feature was an enormous emphysematous distension, which induced compression of the deep-seated veins. The superficial veins were distended with gaseous fluid, which also separated the fibres of the muscles from each other. These last were pale, but not disorganized. The patient always died, a state of indifference or stupor coming on, and all remedies proving useless. Perhaps the affection should rather be called *emphysema of the stump* than gangrene, for there was not the disorganization of tissues met with in ordinary gangrene; on the contrary, they remained distinct and recognizable, and preserved their consistency, relations, and organization.

HOSPITAL GANGRENE.

Besides the well-known ulcerative and pultaceous forms of the disease, the author met with a small number of examples of another form, hitherto unknown to him, and which he designates as *caseous*, which attacked stumps nearly healed. The lower angle of the stump became violaceous and engorged, and a small excavation formed, which soon filled with matter of a sebaceous consistency and of a grayish color. This constantly increased in quantity as the excavation, which was lined by a soft membrane, rapidly augmented in size. The progress of the affection was at once arrested, while it yet seemed local in its operation, by the actual cautery or nitric acid. Hospital gangrene in the two other forms affected many patients besides those who had undergone amputation: and the author regards it as a manifestation of a general pathological rather than a local condition, the air-passages being the ordinary vehicle of its transmission. He found local treatment of little or no avail, unless the overcrowding could

be diminished and ventilation secured, which, under the circumstances, was rarely possible. Of the great number of local applications tried, the *perchloride of iron* succeeded best. In 30 cases, where all other treatment seemed unavailing, amputation was performed, 14 of the patients dying, and 16 recovering. In none of the 30 cases was there relapse of the gangrene, nor did one of them die of the immediate effects of the operation.

PURULENT INFECTION.

This prevailed in the Constantinople hospitals from the period of the battle of the Alma to the end of the campaign, and proved the principal cause of death after wounds and operations. It especially manifested itself in the case of osseous lesions, however slight these might be. Fractures of the shafts of the long bones were always rapidly followed by pyæmia, rendering any subsequent operation useless and mischievous, inasmuch as this but accelerated the progress of the general affection, as of 490 amputations performed in continuity, 192 terminated fatally, while but 32 of 49 disarticulations exhibited a like issue. The author has found no description of treatment useful, and recommends only that symptoms should be combated as they manifest themselves.—*Brit. and For. Med. Chir. Rev.*, April, 1860, from *Recueil de Memoires de Medecine et de Chirurgie Militaires*, tom. xxii.

OBSERVATIONS ON EXTERNAL TURNING.

Prof. Carl Esterle gives an elaborate exposition of the subject of external turning. In some of the applications of the operation his views and experience are extremely interesting. He commences by citing the opinions of Wigand, Matteo, and Stoltz; and then considers the conditions which favor spontaneous evolution, and the manner of operating. The patient is to lay so as to relay the abdominal muscles as much as possible. The method pursued by nature in spontaneous version is to be closely followed. The partial peripheral contractions of the uterus which diminish the transverse diameter are to be replaced by lateral compressions, which must gradually merge into a compressing stroke on one side near the fundus, on the other near the os uteri. This is much aided by gentle blows applied alternately to the apices of the ovum. These blows may be repeated more quickly at a later period by acting on the one side upon the head, while with the other hand a fixed point is maintained upon the opposite extremity. This will not always succeed in removing the head at the first attempt. When effected, the longitudinal position is to be maintained. This is to be done by the recumbent posture and

bandages. The author's observations were made upon 500 pregnant women, who were mostly examined in the seventh and eighth months. Among these were detected 22 complete transverse presentations. Nine were rectified spontaneously; in ten external turning was carried out; in two turning by the head was effected by combined internal and external manipulation; and in one case internal turning brought down the breech. In the ten cases of external turning, placenta prævia was present once; pelvic contraction of the first degree twice; excessive obliquity of the uterus three times. In some instances the cause of the cross-presentations was probably strong compression of the abdomen for the purpose of concealing pregnancy; and perhaps also the weight of the cloths, which, as countrywomen wear them, presses almost entirely on the fundus uteri.

We give three of his cases as examples of the practice:

Case 1.—A woman, pregnant thirty-four weeks; head high to left; back forwards, breech towards right ilium, liquor amnii copious. It was sought to bring the head down, which was so far successful that it was brought within reach; but as soon as the pressure was removed it receded. After two unsuccessful attempts to retain the head, the breach was brought down. This was effected without much difficulty, and was maintained. On repeated examinations, the longitudinal direction of the fœtus, with the breech presenting, was constantly verified. Twelve days after the last examination labor began; the occiput was presenting in first position, and the labor proceeded normally.

Case 2.—Pregnancy near termination. Twins diagnosed; one fœtus in first head position, and one in cross-presentation, head to the left, back backwards. During labor the first fœtus had to be delivered by forceps. External turning was resorted to to rectify position of the second. The head was easily brought down, and while assistants by external pressure maintained it *in situ*, the membranes were ruptured, and the head was born in the first position.

Case 3.—A woman, pregnant thirty-two weeks. Head high to the right; back backwards. External turning proved very difficult and tedious; but by persevering especially with the methodical strokes, it succeeded in placing the head in the second position. Upon this the customary bandage was applied, and recumbency on the right side prescribed. After a short time, however, the woman was unable to bear the bandage, or to lay in the position ordered. When examination was made four days after, the head had moved, but not quite back to its original place; it had passed over to the opposite side, over the left crista ilia. The causes of this side

movement were the great quantity of liquor amnii, the great flaccidity of the uterine walls, and above all, a marked inclination of the uterus to the right, in consequence of which the breech, which had been brought to the fundus, continued to move in the direction of this inclination, and was supported by the laying on the right side, as ordered. External turning was performed a second time successfully.

[The chief field for the useful application of this proceeding appears to consist in the rectification of cross-presentations during the latter weeks of gestation. It is, of course, a substitute for the more severe and hazardous operation of internal turning. It deserves more attention than it appears to have received in this country.—Rep.]—*Ibid*, from *Schmidt's Jahrb.*, 1859.

CONDITION OF THE LUNGS AFTER DEATH FROM CHLOROFORM.

In an essay publised in the *Archives Generales* (1858), M. Faure endeavored to prove that when chloroform, in place of spreading equally and uniformly over the lungs, became concentrated at certain points during inhalation, such important modifications of the pulmonary tissue resulted as seriously to compromise the functions of respiration. The lungs then presented violaceous, or blackish spots, which, on excision, proved to be deep-seated ecchymoses, having a greater extension within than externally. The tissue had lost all crepitation, becoming as if "felted," the blood no longer leaving it, but seeming to have become combined with it. It has been objected that such lesions were the result of the mode in which the experiments were carried on, and that man, not breathing through tubes passed into the trachea, need not exhibit such appearances.

A recent case, however, contradicts this view. A woman who had inhaled chloroform died suddenly, when to all appearances she was about to be saved; and the condition of her lungs was exhibited before the Paris Society of Surgery. The lungs, several portions of which were in a normal condition, exhibited some singular congestions and ecchymoses, resembling those which M. Faure has described at great length, and having this remarkable, that they did not disappear even after the lung had been macerated for eight hours in water—the blood seeming, so to say, to have become combined with the pulmonary substance. The right lung was attached to the thorax by firm old adhesions, but the left lung was entirely free from these. The latter crepitated over nearly its entire length, the non-crepitant portion being proportion-

ally very small in extent, and emphysematous. The right lung crepitated nowhere, but was a very dense, fleshy, resisting mass, containing only a small quantity of air at its edges. Its color was deep red or blackish at certain points; this not resulting from hypostasis, for it was less deep where in that case it would have been most observed. The left lung was much less deeply colored at points, but its general appearance was of a bright red. But the upper lobe of the left lung, *i. e.* just the point least liable to cadaveric congestion, exhibited a considerable dense, deep-red congested portion, exactly like, indeed, the totality of the right lung. The heart was manifestly hypertrophied.

Thus, in this case, the left lung had been in its normal condition, but the right lung was deprived of a portion of its functions—a circumstance which would become a source of danger when the subject was submitted to the action of chloroform. It is certain that when a lung can no longer move freely in the pleura, its movements are diminished, and its circulation is more or less impeded. Chloroform, in place of becoming distributed equably and uniformly, may then become accumulated in considerable quantity in a lung which can no longer return upon itself in consequence of the adhesions which affix it to the parietes of the thorax; and lesions are produced resembling those which M. Faure determined artificially in animals—lesions which render the lung unsuited for hæmatosis and the continuance of life impossible.—*Union Med.*, 1859, No. 144.

Experimental Inquiry into the Action of Alcohol on the Nervous System.—Dr. W. Marcet relates (Medical Times and Gazette, March 3 and 31, 1860), some experiments made by him to determine the action of alcohol on the nervous system. He gives the following conclusions as the results of his investigations:

1. That alcohol acts through the circulation principally, though not exclusively, on the nervous centers by means of absorption.

2. That alcohol exerts a slight but decided action on the nervous centers through the nerves, independently of the circulation.

3. That the influence transmitted through the nerves may be of two kinds:

(*a.*) It may give rise to a shock, or temporary complete suspension of sensation and of muscular motion (with the exception, perhaps, of that of the eyelids), although respiration continues.

(*b.*) It may produce no other visible effect than shortening life.

Editorial Department.

DEATH.

There is much that is beautiful in the transition which we term death. Divested of such repulsive associations as the shroud, the grave, and the worm, and viewed in its true import, beauty, and power, the mind rises into sacred sublimity as it thus views the change in its true character, and contemplates the spiritual body in its new sphere, clad in the robes of blissful immortality.

The pathology of death is not the only phase in which the physician should view the subject, nor is it necessary that he should assume the garb of religion and trespass upon holy ground by making its moral bearings the theme of conversation. It is his business to retard final judgment upon his patient, not to prepare him for it. It is his duty to combat the enemy, and he is justified in resorting to every honorable stratagem to effect his object.

To this end it may be necessary to detract from his power or skill, and by a bold, defiant mien infuse confidence and hope into the terror-stricken invalid, or familiarize the mind to its contemplation by presenting it in the nude form of a peerless catholicon, or a road to joy, or a messenger from God bearing glad tidings, or a channel of communication with departed friends, or otherwise as the individual may demand, but always with a view to the effect to be transmitted and effectual for life, and never with a view to eternity or the life whose physiology it has not been his province to study. Let the livery of Heaven be worn by those entitled to it. Be it the physician's duty to guard the body, and leave the soul's safety to his patient and his patient's God.

But would you separate the Christian from the physician, and deny to him the privilege of ministering spiritual food because he is a physician? We would, as a rule, and that rule admitting of very few exceptions; because our observation has taught us to suspect the grace which combines two duties,

the one of which makes capital for the other. Let the physician, by all means, be a Christian—it is his duty; but let his be the unobtrusive Christianity which goes not upon the housetop to pray, or for a show makes long prayers. His duty to himself demands this—his duty to his patient does not. We are sick of that long-facedness and low-lippedness which pretends on every Sabbath to repent of the sins of the week, and every week accumulates a fresh budget for the Sabbath. We are sick of that "form of godliness" which has a smile and a prayer for a church brother, and a frown and a curse, and a stab for a professional peer. We love consistency, and esteem the infidel above the hypocrite.

But to return from this digression. We all know the varying effects produced upon individual minds by a consideration of the final change which awaits our mortal body, and it would be presumption to offer any rule for action in the premises. Such, however, as are familiar with scenes enacted in the last agony, know full well that the groans, and cries, and distortions of the sufferer fearing to cross the gloomy portal, which are so frequently made themes for pulpit declamation, are rarely realized. We have yet to see the first evidence of the truthfulness of such pictures. On the contrary, we have seen the body, even here, as it were, lighted up with spiritual fire just as the immortal soul was parting from its rude tenement. We have seen the darkness of death interrupt the half-formed smile, and check the faintly-uttered exultation. Many hands have peacefully become pulseless within our own when their last expressions were of gratitude and peace. Thus has it generally been our lot to see "death swallowed up in victory." Not so always, for we have heard a maniac curse on the brink of eternity, and have sometimes witnessed the most stolid indifference when the noise of the sickle was audible. We contend, however, that the article of death deserves serious consideration from the physician, for other reasons than those which generally give it importance, and it is a question of deep concern, whether an injudicious presentment of the subject may not counteract the most energetic therapeutic agents, and a judicious one become itself a most important means of cure. Sir Astley Cooper is not alone in having seen a patient "die because he would not live," and recoveries of such as the

patient, who, when informed by the physician that the chances were ninety-nine in a hundred that he would die, replied, "Doctor, I'll take that one odd one and you can take the rest," are by no means uncommon.

The subject is one which demands the most careful thought and the profoundest exercise of judgment. Whether the object be to allay excitement, subdue fear, arouse to energy, or alarm to action, the means must vary with individual cases, and all must be left to the discriminating and philosophic mind of the expert practitioner.

PROFESSOR GASBOMB.

It seems to be exceedingly difficult for some men to divine the justice which prohibits a man of education from advertising, and accords the privilege to quacks and nostrum-venders. A professional acquaintance, Dr. Gasbomb, who is a member of a State Society, member of the American Medical Association, and Professor in a chartered school, and high, and above, and beyond all, a member in good standing of an erudite and immaculate County Society, seems to be in great distress concerning the matter, and his various contortions in evading the responsibilities attaching to a violation of the law, while he secures the emoluments arising from such violation, are very amusing, and remind us of some of the acrobats, voltigeurs, and automatic figures, which have afforded us so much fun in boyhood's days. Now Prof. Gasbomb is a man of family, a regularly educated doctor of medicine, a poor man, and dependent for his daily bread upon the inability of others to eat theirs, or their bad digestion after having eaten it. Why should he not advertise as well as the uneducated and incompetent? Why should he be restrained from patronizing the press, and saving souls by saving bodies from the grasp of quackery? One of his friends advertises thus, and heads his advertisement "For the Suppression of Quackery":

> Also, agent for DR. DEWEE'S FEMALE MONTHLY REGULATOR, a safe and certain remedy for Obstructions, Irregularities, etc., and is the only reliable "preventive of pregnancy" warranted not to injure the health. CAUTION! it should not be used during pregnancy, as MISCARRIAGE would be the result, though always harmless.

Why object to Prof. Gasbomb for using more forcible lan-

guage, and inserting his caution in letters of blood that might appal all—except those who did not wish to be frightened?

Another writes (and we clip these sweet incentives to morality from our own high-toned and moral daily press):

* * * * Dr. Bonaparte's Celebrated Preventive never has nor never will fail—married ladies too feeble to bear children, except at the hazard of life, should be in possession of this invention. Price reduced to $5.

Dr. Bonaparte's French Patent Male Safe! It is perfectly safe, and never fails to give satisfaction. It is the only safe and sure preventive against pregnancy and disease. The price of the French Patent Male Safe is $1 the single one, $4 per half dozen, $7 per dozen. Sent by mail.

Now Prof. Gasbomb would scorn to descend to sign his name to such an advertisement, but has no objection to be understood as accepting that married ladies sometimes should not bear children, and he draws an important moral line of demarkation between the anti-conceptionist and the abortionist; nor does he consider the destruction of the germ or embryo as equal in moral turpitude to the destruction of the fœtus. He is indeed a public bugbear to the herd of abortionists, having taken official occasion to denounce them.

The Professor appeals to the sentiment of the young, hard-working poor of the profession, not to that of those who have grown fat and are jealous. He stoops not to tamper with the ignorant prejudices and superstitions of his race by such advertisements as the following:

Astonishing.—Madam Morrow, seventh daughter, born with a caul and gift of foresight, tells how soon and often you will marry, and many events, even your very thoughts. Fee 25 cents, until others stop copying my advertisements. 184 Ludlow street, below Houston. Gentlemen not admitted.

Madame La Mars, fourteenth daughter, born with seven cauls on her face. She can penetrate into the recesses of the heart and reveal your whole life. At 261 Bowery, near Houston street. Fee, 25 to 50 cents.

But, in the providence of God, ignorant, and prejudiced and superstitious people are allowed on the earth, and it would be folly to argue with them, as with the wise; it would also be cruelty to surrender them to the ravenous packs of hungry quacks which surround them. His duty to them and his profession demands that he should pursue a certain (what he terms) *policy*, and he does it.

Prof. Gasbomb is also an American (some unkindly call him a medical know-nothing, but this results from jealousy); he possesses great State pride, and glories in having been born in his native country. Hence all matters pertaining to the medi-

cal renown of our glorious Confederacy, awaken in him the liveliest emotions. Conceive, then, of his pleasure in reading the following evidence of the triumph of a countryman:

A British officer, writing from Teheran, Persia, to the London Times, remarks: "A Cathartic Pill, manufactured by an American Chemist (Dr. J. C. AYER, of Lowell, Mass.,) has cured the Shah of a liver complaint that threatened his life. This simple fact, as might be expected, renders the Americans immensely popular here, while we English are overlooked. Doubtless our own scholars made the discoveries which he employs, and thus it is in every thing; we do the labor, then the mousing Americans put their mark on it and take the reward. Dr. Ayer is idolized by the Court and its retainers here, which will doubtless be reflected to him on a gold snuff-box, or diamond-hilted sword, while not the name even of Davy, Christoson, or Brodie, the great lights by which he shines, is known."

Prof. Gasbomb is a surgeon, and many manglers and butchers impose and thrust themselves upon community as doctors learned in this ancient art. Is it not, then, the Professor's duty to interpose his skill, and stand between them and the dupes whom they might victimize? The Professor is a practical man. He has made crooked eyes so straight that they turned the other way; he has made club feet as pliant as an old maid's tongue; he has plugged a protruded intestine so tight in the inguinal canal that the patient never had a passage afterward; he has operated for stone, and given the patient a duplicate delivery by incising an extra hole in his rectum; he has operated at the other end of the tube as well, and so improved its entrance by widening the gap of a cleft palate, that the patient might swallow a whole potato through his nose if his nostrils were large enough. He is always present at accidents, from the spraining of an ancle to the dislocation of a thumb. He loves operative surgery, and so delights in blood, that he would divide the posterior tibial in an operation for club foot, just to see the blood flow. He can drive as fast a horse, smoke as large a pipe, drink as many cock-tails, and swear as many oaths as any other man. Why should not the "locals" and item-gatherers herald his name and his fame untill the daily press is made offensive by their laudations.

But the Dr. is a Professor also, and as such is a greater lati-

tudinarian than he is in his more humble spheres. His school is first upon its back and then upon its side, like a half-choked baby under the "ready method" treatment. But the abortion must be sustained, for the fate of unborn millions lies incipient in its undeveloped womb. The end will justify the means, and the highways and hedges must be sought, and the halt and the blind, the sick and the poor, the learned and the unlearned, the long-eared and the short-eared, the ringed, the streaked and the speckled, must put on any kind of garments and be compelled to come in. Couriers must be employed; runners retained; the arrival of steamers, and stages, and cars be watched; hotels be subsidized; hospitals and sextons bought up, students paid, diplomas promised, and tickets for lectures be distributed like ballots before election; for many have been bidden, the supper has been prepared, and every guest will number one in the catalogue, whether he be white or whitney-brown, or a shade or two of darker hue.

Prof. Gasbomb is a liberal thinker also, and enjoys so supreme a contempt for those who use the "livery of Heaven to serve the devil in," that he rushes into the opposite extreme, and hence he will not darken the Church by his presence, or give alms to the needy who solicit them, or subscribe to missionary or charitable associations, because these acts might be improperly construed. Besides which, they are not congenial to his tastes, and would lead him into the society of men in whose presence he would feel out of place. But in another view, it would not be expedient; for the just and the unjust, the moral and the vicious, the devout and the scoffer, are alike subject to the ills of life, and he has bosom friends who do the Church part of the business for him, while they could not consistently do the honors in which he excels, or mingle in the society in which he shines so luminously. Indeed, he has a watch-tower upon every avenue, and a watchman upon every tower, so that the synagogues, cathedrals, churches, meeting-houses, legislative halls, council chambers, committee rooms, printing offices, editorial sanctums, reporters' haunts, hotels, livery stables, bar rooms, restaurants, hack stands, and brothels, are spotted and squatted by whippers-in and trumpeters; and thus he is sure to be prayed up, or legislated up, or printed up,

or drank up, or ate up, or cursed up, or to be heralded in some way upon every trivial pretext.

Of the Professor's social, moral, and political qualities, we need not speak further. They are to be inferred from the photograph taken, for all may know that such an one is a walking, constant advertisement. He might as well have a sugar-loaf hat, straight-bodied coat and silver buttons, and a placard on his back with the blasphemous heading of his confrere, Dalley, "The Chief among Ten Thousand," and yet he will argue that his course is a legitimate one, and the press will sustain him as they will Ayer, or Moffatt, or Brandreth, or Madame Restell, or Dr. Bonaparte.

UNIVERSITY OF LOUISVILLE.

By reference to the advertisement of the Medical Departments of this Institution, which appears in our journal, it will be observed that the twenty-fourth regular course will commence on the first Monday in November, and the Preliminary course on the first Monday in October. The session will close on the last of February. No change has occurred in the organization, and the same zealous determination to train up medical students in the way in which they should go, which characterized the labors of the Faculty last year, will again be exercised with increased facilities for illustration, and widely-extended fields for clinical observation. The notes of interest and inquiry which come to us from the Southern and Southwestern States indicate an active attention to our city and the inducements which it offers to the students of our honorable profession. With every advantage of climate which the most Northern school possesses for anatomical pursuits, and with many not possessed by them; with advantages in the class of patients treated in our hospitals, dispensaries and clinics, equal to those of the most Southern city; with a Faculty of long and successful experience, and a reputation second to none; we confidently look forward to that success which is the mede of merit and integrity, and which must flow from the exercise of honorable and persistent energy.

The University of Louisville has carefully avoided all interference with, or allusion to, events in the medical history of

the past winter, which have led to unfortunate discussions and recriminations. Her mission is to teach Medicine and Surgery, and her Faculty feel that the period allotted to the delivery of lectures is short enough, and should be better employed than in the discussion of questions not relating to the subjects of their respective chairs.

ANATOMICAL INQUISITIVENESS.

The foundations of our social and moral government are only in process of construction. Our Republic is but a prematurely developed infant. Upon the rising generation will depend the stability of our institutions. How important, then, so to bend the young twigs that the trees may incline toward the shield of civil and religious liberty. Christianity is the school of liberty. The Church is the vestibule of Christianity. Hence it is the part of patriotism to cultivate a love for, and induce an observance of the ministrations of the Church. To this end should the philanthropist direct his energies, and we desire him in this connection to heed a suggestion from us.

Piety, erudition, zeal, and fascinating social qualities are well enough in a minister; but, sir, there is more power in architecture than in all combined. *If your church floor is upon a level with the street, your minister can not be popular with young men; if it be high above that level, he will undoubtedly be so.* If any should doubt the correctness of this proposition, let him observe the side-walk in front of the steps of some of our philosophically-constructed church edifices, as the congregation is emerging on Sabbath days, and he will find so long a line of long-eared things artistically dressed, repulsively perfumed, and vulgarly engaged in anatomical pursuits, that he will doubt no longer.

The annual announcement of the College of Physicians and Surgeons of New York is before us. If there be "luck in a name," what must there be in a multitude of names. First, we have those of the President and twenty-three Trustees of Columbia College, to which time-honored and highly reputable Institution the College has attached itself. Next, those of the

officers, and twenty-five Trustees of the College. Next, the names of three Emeritus Professors, and the seven who constitute the Faculty proper; then two Adjunct Lecturers, Demonstrator and Assistant Demonstrator, Assistant to Professor of Surgery, Librarian and Janitor, and then the names of several gentlemen who lecture during the fall course. Dr. Detmold, we perceive, still continues his excellent clinique at the College every Wednesday. Many hospitals, asylums, infirmaries and dispensaries are described. These are doubtless most excellent institutions, and if they were all accessible to students, and students could possibly avail themselves of the advantages which they might offer, the inducements to medical students would certainly be very tempting. But the initiated know that such a parade is only for effect, and we regret to see the fifty-fourth session of this honorable institution announced in such Bonner style.

The American Medical Times having absorbed the New York Journal of Medicine, and swallowed the "Press" of that city, appears in graceful obesity, and bids fair to be an exceedingly useful weekly. New York requires ventilation; her numerous schools must have vent, and the plan of blowing their own trumpet being heterodox, we will soon hear bugle-blasts from this triune issue which will annihilate the suburban village of Philadelphia, and mete out that justice to the Metropolis which has been so long withheld. Just such a medical journal as the Times, judiciously conducted and independently edited, is a desideratum, and will doubtless be, to some extent, remunerative. With advantages far exceeding those of Philadelphia, with teachers of undoubted ability and facilities for imparting instruction unsurpassed, we yet find a lower tone in medical literature and a greater sparseness of original men in New York than we find in some cities less populous. There must be some cause for this, and we do not pretend to divine it, but incline to suspect that there has been too little concentrativeness of action, too great separation of antagonistic interests, too blind a policy pursued; and now a change being demanded, all will rush to the defence of the city's medical honor and renown; the battle will be between

New York and Philadelphia, and the little local fights between the partizan cliques of the cities will be decided when the victory becomes won and the spoils are to be divided. This is the true policy, and an honorable contest will shed great professional light upon country towns. If you begin to wrangle, and criminate, and impugn motives, and tell tales, do, please, give them only a local circulation, for they might vitiate a distant atmosphere. New York must not say to Philadelphia, "You have boasted that no student is ever rejected at your school, and you do not pretend to enforce the rules you publish for your governance. This is rank clap-trap." Philadelphia must not say to New York, "You are a Babylonish cheat; you are not even compilers; your journals are below par; you are professionally bankrupt;" for such charges and countercharges might result in the appointment of a Committee of Investigation, whose revelations would be sad to contemplate. Please don't say such things, gentlemen, please don't! Science is a term not derived from *scindo* and *eneco*, but from *scio*. Be calm, then, but if you will fight, we will see that you have fair play, for while we have often heard strange accusations brought against your schools, we are not disposed to see you unfairly injured, nor do we impute your silence, and reserve, and avoidance of the National Assemblage of your peers, to a coward fear of such rude questioning as would militate to your injury, whether you answered or held your peace. Not so, gentlemen, but we really long to hear the clash of arms in the battle for which New York is marshaling her forces.

ALMOST A FATAL CASE OF CEREBRAL APOPLEXY FROM EXCESSIVE MENTAL EXCITEMENT.

On the 19th inst., a gentleman in perfect health walked into the post-office of this city. While there he conversed freely with several acquaintances, who did not recognize any peculiarity of manner or appearance. He was observed opening his post-office drawer and taking therefrom a letter, which he proceeded to read, the thermometer at the time standing at 98°, and not a breath of air in motion. In a few moments he was taken into a neighboring saloon almost exhausted and

yet in a high state of mental excitement. It was suggested that the letter might have contained bad news, and it was determined to examine it, whereupon the following was found:

CALLOWAY COUNTY, KY., July 10, 1860.

Editors of the Louisville Monthly Medical News—

GENTLEMEN: Enclosed find three dollars subscription. Pardon my negligence in not forwarding it before. I have been absent the greater part of the spring. Your journal contains much interesting matter to me, and brings to memory faces and lessons pleasant and familiar.

[Signed.] W. ST. J. J.

Upon closer investigation, it was ascertained that this was the only response which had been received from about three hundred delinquent subscribers. Excess of joy, doubtless, was the cause of his condition, but under the judicious use of fanning and ice-cream a speedy recovery ensued.

OUR SUBSCRIBERS

Are again most earnestly urged to manifest their appreciation of us by a prompt settlement. Their digestion will improve when this is done, for a clear conscience is the best anti-dyspeptic known. We dislike to erase the names of delinquents from our subscription books, for two reasons: First, because we would have very few remaining; and secondly, because we know they would not only feel deeply mortified, but would also be seriously injured by the loss which such a course would entail. Nevertheless, gentlemen, it must be done, or our epitaph may soon be briefly written—"Starved out!"

If you are our friends, you should sustain us by paying what you owe. If you are our enemies, you should "heap coals of fire on our head" by paying what you owe. If you are entirely indifferent to us, manifest, if you please, that indifference by refusing longer to take our journal from the office, first, however, having complied with law and equity by paying what you owe. If you have not the money, send postage stamps, prairie chickens, old Bourbon, knit stockings, counterpanes, wolves' scalps, buffalo hides, sheep's pelts, coon skins, whale leather, cast-off clothing—any thing but your "best wishes for our success" unsustained by evidence.

The readers of the Medical News have probably noted the withdrawal of the name of the senior editor from the cover of the July No. A multiplication of engagements has compelled him to sever his connection with medical journalism. In taking leave of the society of cotemporary editors, he offers his acknowledgments for the numerous courtesies extended to the journal of which he was joint editor. To the readers and patrons of the Medical News, he tenders thanks for their liberal support and encouragement. It is unnecessary to assure them that the paper will suffer no loss in interest or practical usefulness by his withdrawal, but will maintain, under charge of its present editor, its reputation for the originality of its articles, and independence and boldness in its sentiments. He solicits from his personal friends among the readers of the Medical News their continued firm support.

S. M. BEMISS.

Our venerable friend insists upon the insertion of the above, and as the reader will not see our blushing face, we yield to his desires. None can more deeply regret his fall than we do, for he has descended from the exalted position which he occupied as our senior to take rank among professors, doctors, and State officials. No cloud ever dimmed for a moment the bright light of our mutual friendship, and we bid him an editorial farewell with the sorrow of manhood and grace of philosophy. And yet we congratulate our readers upon the change, for, relieved of other duties connected with the journal, his graceful pen will be more active than before, and medical truth will be more frequently gilded by the luster of his erudition, and the brightness of his intellect. In all his vocations we bid him God speed. For ourself, we are the more resigned to our loss, because we feel that without the material aid of our subscribers we can not long survive him. Indeed, we already hear the premonitions of impending dissolution, and it is for them now to say whether or not we shall be allowed to die from inanition.

The Middle Georgia Medical College is a new institution, located at Griffin, Ga. We recognize the name of our old friend Dr. L. J. Robert among the Professors, and wish him success.

ANOTHER DEATH FROM CHLOROFORM.

Michael Lenahan, aged forty-five, died at Bellevue Hospital a few days ago, from the effects of chloroform administered by one of the assistant surgeons at the institution, preparatory to the proposed performance of a surgical operation. Dr. Rives, who administered the chloroform, testified before the Coroner, that "every precaution was used to prevent the fatal result, and that after discovering the low condition of the patient, nothing was left undone whereby he might be resuscitated." It is maintained that no death has ever occurred from the administration of ether as an anesthetic, and many public hospitals have discarded chloroform and depend exclusively upon ether. A sad array of deaths already appear upon the record of the effects of chloroform, and independently of such as have been the immediate consequence of its administration, it is now contended that the numbers might be painfully increased if we were to add those in whom its secondary effects have probably produced a fatal result. But without discussing this branch of the question, or another, which attributes these results to the impurity of the article used, we may safely say, that sufficient facts have been accumulated to demand the utmost caution in its use, if not to warrant us in preferring ether.

We learn that a new medical school is in process of formation in New York city. Among the names of gentlemen spoken of as Professors, we recognize those of Drs. Carnochan and D. M. Reese. It is designed to have twelve Professors, the sessions to be of six months, and but four lectures to be delivered daily. This is a step in the right direction, and if the other chairs can be as well filled as those which the gentlemen named are to occupy, there will then be an available opportunity of testifying zeal in the cause of medical education by sustaining the enterprize. If, however, the requirements for graduation are founded upon Dr. Reese's report, we fear that the number of Professors will be greater than that of the students. We trust not, however, for although we would be glad to see the profession upon the basis indicated in that report, we are satisfied that a great many years must of ne-

cessity roll round before such resolutions as the committee recommended could by possibility be carried out, even in their spirit. We may be in error, and as the committee will now have an opportunity of evidencing their faith by their works, that error can soon be demonstrated.

The St. Louis Medical and Surgical Journal in commenting upon the proposition of the physicians of Philadelphia to tender Prof. Wood a complimentary dinner before his departure for Europe, uses this equivocal language: "Having well and faithfully served his generation, the profession of his native city will honor themselves in honoring him, now that he is about retiring to private life; and to this the profession throughout the country will heartily respond amen!" To what? His retirement to private life?

The Savannah Journal of Medicine has become imbued with new life and increased vigor by the recent acquisition to its able editorial corps of Dr. J. S. Wilson, of Columbus, Ga. We feel obliged to Dr. W. for his complimentary notice of our journal, and cordially wish him a full tide of success in his new sphere.

Dr. Lunsford P. Yandell, Jr., has been appointed Professor of Materia Medica and Therapeutics in the Memphis Medical College.

Endurance of the Horse.—Some cruel experiments have lately been made at Paris to test the endurance of horses. It appears a horse will live on water alone five and twenty days, seventeen days without eating or drinking, only five days if fed but unwatered, ten days if fed and insufficiently watered. A horse kept without water for three days, drank 104 pounds in three minutes.

SIMILIA, SIMILIBUS, CURANTUR.

There was a man in our town, and he was wondrous wise,
He jumped into a bramble bush, and scratched out both his eyes;
And when he saw his eyes were out, with all his might and main,
He jumped into another bush, and scratched them in again.

MONTHLY MEDICAL NEWS.

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(Reported for the Monthly Medical News.)

MORBUS COXARIUS—HIP JOINT DISEASE.

A Clinical Lecture, delivered before the Medical Class of the University of Louisville, January 7th, 1860. *By* BENJAMIN R. PALMER, M.D., *Professor of the Principles and Practice of Surgery.*

You will remember, gentlemen, that on former occasions I have discussed pretty fully the subject of diseases of the joints. I now propose to occupy a short time with a few remarks based upon two interesting cases of a very serious, and by no means infrequent malady, known as Hip Joint Disease. I shall show you two cases, presenting the disease in different stages, and hope by so doing to impress your minds with the leading and more important features of this distressing, and often most obstinate malady.

What do we mean by the term Hip Joint Disease? Of course the term might be made to embrace any form of disease incident to this articulation; but custom has limited its application to a definite malady, usually of a chronic form, commencing as an inflammation of some of the component textures of the joint, which, if not arrested, proceeds to involve all the tissues, bones, cartilages, serous membrane and ligaments, and, after a time, varying greatly in different cases, having effected the disorganization and destruction of more or less of these parts, terminates either in the death of the patient or an imperfect restoration—that is, a restoration to health—but with an impaired limb. A modern name of this affection would seem to give great definiteness to its character. Tuberculosis of the hip joint is supplanting the old name, morbus

coxarius, with some surgical writers. Now, what does this mean? Does it imply that there is always a deposit of tuberculous matter in and around the joints, and that the inflammation and subsequent disorganization of the tissues resemble in their mode of acting the destruction which awaits the lungs in which existing tubercles, by becoming active, constitute the foci from which the disorganization extends to the whole organ? That tubercles are not always found in or near the joint is evident, but this is not indispensable to the conditions which constitute a scrofulous disease. Thus, we speak of scrofulous iritis, corneitis, etc., without meaning to be understood that tubercles are present in the part inflamed. If we say that hip joint disease is a caries of the bones, associated with a scrofulous constitution, we shall, I think, say all that the case warrants. But is it true that in all cases where this disease clearly exists we are warranted in assigning to it a scrofulous character? I should be unwilling to answer that question positively, although in a large portion of the cases the evidences of such a combination are clear. The class of persons most frequently affected with this disease corresponds very closely in most of the attributes usually assigned to the scrofulous. There are a few points to which I wish briefly to refer before introducing the patients. You are all familiar with the anatomy of the hip joint; you know how the bones are related, and need not now be informed how the ligaments, cartilages, and synovial membrane, are disposed in this articulation. In the disease which is the subject of these remarks, all these tissues become involved. It is not always easy to distinguish with certainty in which it begins. People do not die in the early stages of this affection, except by the intercurrence of some other disease, and consequently opportunities for investigation are rare. In some cases the violence of the disease seems to be expended upon one part rather than another. Thus the head and neck of the femur in one, while the acetabulum in another appear to suffer most. Erichsen makes a distinction, based upon this fact, which may be of importance in case the question of excision should come up. We always like to know the causes of diseases which we are called upon to treat; but often it is very difficult to obtain satisfaction on this point, and there are few maladies in which

the exciting cause is more frequently obscure. Patients, or their friends (for here it may be remarked that the victims of this affection are, in the large majority of cases, young children) will, in their desire to find a satisfactory reason, ascribe it to the most trifling causes, strains, falls, etc., occurrences which are happening to children almost every day. It is quite likely that in a scrofulous child a degree of violence may excite disease which in a healthy one would not be felt. But in many cases we are obliged to rest contented in ignorance of any cause which clearly induced the attack.

It is convenient to divide the disease into stages, as the symptoms as well as the treatment vary at different periods. Three stages may properly enough be described as characterized by peculiarities. The *first* is the forming stage, in which the inflammatory process is beginning to be established; the *second*, when inflammation is fully developed, and evidences of purulent collection or the approaching formation of pus show themselves; *third*, when the bones have become carious, and disorganization of the tissues of the joint is fully in progress.

In the first, or forming stage, it is of great importance that you be able to recognize the disease, for at this juncture well-directed and judicious means may arrest its progress and effect a cure. But if you fail to do this, and it goes on to suppuration, ulceration, and caries, you may set it down that you are to have a long and tedious case. The early diagnosis, then, is of *prime* importance? What are the early symptoms? First, the age of the patient will assist a little. By far the largest number of cases commence in youth or early childhood, often between two and six years. Frequently the disease comes on slowly; for a time there may be no pain, but there is noticed merely an imperfect walk. The child favors one side, as the parents say, occasionally, stumbles, or assumes a hobbling gait. He may not complain of pain at first; but when he does, it is usually referred to the knee, often to the inner side. It is not infrequently superficial, even appearing to be seated in the skin, with tenderness on pressure. This is attempted to be explained by the relation of nerves; but the important fact to bear in mind is, that in this disease, while the patient complains of his knee, the hip is often entirely free from pain. This symptom of pain in the knee is liable to induce the mis-

taken opinion that rheumatism is the cause of the suffering; but it may usually be discriminated by the fact that it is stationary, while rheumatic pains are migratory, and besides there is no swelling or change of color in the knee, and the pain is commonly more severe at night, differing in this from the pain of rheumatism.

When a patient comes to you with impaired action in one of his lower extremities, especially if young, complaining of some pain in the knee, or even in other parts of the limb below the hip, where there is no swelling or discoloration at the point complained of, you will be apt to suspect the hip as the seat of the trouble. You should, therefore, make a careful and thorough examination. Strip him, and examine all the parts; cause him to lie upon his face, and examine the nates, and here you will, sooner or later, if your suspicion is correct, often quite early, discover a very important, and almost characteristic symptom, viz., a flattening of the nates, with effacement of the groove between the buttock, the ilio femoral crease. Examine carefully, ascertain if pain or tenderness in the hip joint can be detected. This may be done by manipulation and pressure. A good method is to flex the leg, and then tap forcibly on the knee in such a direction that the blow will be transmitted to the hip. In this way, although there may have been no previous complaint, you may be able definitely to locate the disease in the hip. Rotation, adduction, and abduction should also be made use of for the same purpose. Another symptom which sometimes attracts attention early in this disease, is an apparent elongation of the limb; I say apparent, for I doubt whether the limb is really lengthened, although it is said that by effusion of serum or lymph into the cavity of the joint, the head of the bone may be crowded from its natural position, and thus the length of the limb be increased. Without denying the possibility of such an occurrence, it may be safely stated that in most cases the limb is no longer than the sound one, the apparent increase depending upon a change in the direction of the pelvis, shown by placing the patient in proper position, while he is stripped for examination. You will find, gentlemen, that in the earliest stage of this affection a very careful, and perhaps repeated, examination may be necessary. The symptoms are often quite obscure; but as the disease advances

into what I have termed the second stage, its character becomes more evident. Now the inflammation has developed itself fully, and some of its results show themselves. A new set of symptoms appears, depending upon, and produced by, the extending disease. You now find symptoms referable to the hip itself; pain exists independent of motion, or if not, motion readily produces it. Sometimes, but not always, the pain is of great severity. Swelling and tenderness occur about the joint, and the general health now begins to suffer. During the first stage the constitution may not have shown any signs of being involved; but at this time it begins to succumb; fever, loss of appetite, emaciation, diminished strength, etc., show that the whole system is deeply affected. In a short time you will look for the evidences of purulent formation. Pus may form very slowly and in small quantity, and in some cases where there is but little, and that deeply situated, there may be difficulty in detecting it, but frequently it accumulates in considerable quantity, and one or more abscesses show themselves at different points, behind the great trochanter, on the nates, in front under the pectineus muscle, near the ischiatic notch or about the anus. Sometimes the bottom of the acetabulum is perforated, and matter passes into the pelvic cavity.

This brings us to the third stage of the disease, in which the inflammatory process has done its work to a fearful extent. The ligaments are now destroyed, and the bones are carious, and, to a greater or less extent, destroyed. The head and neck of the femur, either in whole or in part, have disappeared with perhaps a portion of the cotyloid cavity, and with these changes comes a notable symptom about which some diversity of opinion exists, viz., the shortening of the limb, and the alleged dislocation of the femur. That there is real shortening is evident; but that dislocation is a phenomenon of the advanced stage of hip joint disease is perhaps more than doubtful. That dislocation is less frequent than was formerly supposed, is beyond question. It may occur when the diseased action has progressed to a great extent, when the ligaments are destroyed. The muscles may draw the head of the femur upward upon the dorsum ilii. When the head and neck of the thigh bone are destroyed, and especially when the margin of the acetabulum is removed, a change of position may occur

which may be termed dislocation; but even now the muscles do not act with their normal vigor, being invaded by the products of the inflammation, and thus unfitted for much natural action. While there is some real shortening, still much of the apparent deficiency in length is dependent upon a changed position of the pelvis. The shortening exists, in a variable degree, in different patients, according to the condition and progress of the disease. Abscesses form, one after another, point, and are opened or open themselves, discharging large quantities of matter, fistulous passages result from these unhealed openings through which a probe may be passed down to the bone.

I will now show you the cases which have induced these remarks. This boy, who is nine years old, was first attacked fifteen months since, and the disease has run through the several stages with considerable rapidity. You observe that the flattening of the nates is perfect, and the ilio femoral line is completely effaced. This, as I have said, is an important symptom, and you will rarely observe it more plainly exhibited. In passing your hand up the thigh you hardly know when you reach the nates, while on the other limb the crease is well marked. You observe numerous cicatrices where abscesses have formed, opened, and healed. There is very little motion of the joint. You notice that when he moves the limb the pelvis moves with it. On measurement, you see that there is a shortening of the limb, amounting to $1\frac{3}{4}$ inches. In this case the thigh is thrown a little inward, and is but slightly flexed, it is in a very good positiom. Sometimes the limb is thrown across the sound one, and occasionally it is everted. He is now improving, and bony anchylosis is pretty far advanced. When extensive disorganization has resulted, we look forward to this, a firm, immovable joint. Sometimes we have what may be called a false joint, or union by cartilage, which admits of a degree of motion, but in a case like this we do not expect it, and are willing to compromise with anchylosis.

The second case which I have to show you, is this little girl, eight years old, who was attacked with the disease four years ago, and although the case is one of much longer standing, yet it has not advanced as far as the other one has. The first

promises an early recovery, while in this case the disease is still progressing, and great care will be required to effect a cure. You notice from her countenance and general appearance, that she is greatly exhausted and worn down by the long-continued progress of disease. You see in this patient the same flattening of the nates, and the same obliteration of the ilio femoral groove. You also notice numerous scars indicative of the abscesses which have attended the disorganizing of the textures making the joint. Here is one just healed, a little below Poupart's ligament—a few days since it was discharging freely. The thigh is more flexed than in the other case. Her mother tells me that the pain complained of in the early stage was referred to the inner side of the thigh, about half way between the hip and the knee.

Here is another case, not of hip joint disease, but as it illustrates a point of interest in that disease, I have thought it worth while to introduce it at this time. It is an unreduced dislocation of the femur upon the dorsum ilii, of six years standing, in a man thirty-five years old. The point of special interest at this time is the difference in the flattening of the two cases. In the case of dislocation, you notice the flattening resulting from the absence of the head of the bone from its normal position, and from the atrophy of the muscles consequent upon their disuse, and yet the ilio femoral crease remains as well marked as upon the sound side. You observe that here the shortening of the limb amounts to nearly three inches, showing that the full power of the muscles was exerted. I may remark that this patient was attended by a good surgeon, but for some reason, which does not appear, the luxation was not reduced.

You will have observed that both of the children before you belong to a class whose circumstances and habits of life favor the development of scrofulous diseases. There has, in both cases, been great disorganization of the parts, how great exactly it is impossible to say. The ligaments have been swept away, also a part of the head and neck of the femur, and possibly a portion of the acetabulum. They show that much disorganization is not incompatible with restoration to health, for in the case of the boy, recovery is well advanced, and in the girl, it seems probable that, with careful attention,

a like result may be expected. In children (and this is especially a disease of childhood) we are not to regard it, by any means as necessarily fatal. It would seem, in many cases, as though they would be worn out, and succumb, yet after a struggle, the powers of nature triumph, and health is restored, although we must expect more or less deformity. But when the disease occurs in an adult, and goes on to suppuration, and caries, the prognosis is much less favorable. We can not count, even in children, upon certain recovery; but we may have great confidence that, with proper treatment and attention, they may be restored, although not usually, to the natural condition. Occasionally when a case has had early treatment, and under favorable circumstances, not much trace of the disease will remain. There will be a certain amount of weakness of the joint for a long time after, but even this may disappear. But if there is any material loss of substance, we may be well satisfied if our treatment results in a restoration to health, although the limb may be impaired. You will often meet with men whose crippled walk attracts your attention, and on inquiry, will find that in childhood they were victims to this disease, and have recovered with an anchylosed joint.

In speaking of the treatment of this affection, I wish to impress you with the important fact that it should be early, prompt, and efficient. In the first stage, what is to be done? Inflammation, or as some modern writers would say, the inflammatory process, not fully developed inflammation, exists, although of a scrofulous character, and our treatment should be directed to this. We desire to prevent this process from running through its stages to its acme of suppuration. First and foremost of our means, is perfect and absolute rest of the diseased joint. It may be that motion may induce so much pain as to insure this important point; but whether there is pain or not, rest is above all indispensable. The limb should be placed in a comfortable position and there maintained. In many of the early cases, as I have already said, there is little or even no pain in the hip, and in those great care and vigilance will be necessary. Children are especially uneasy under confinement, and it is not always easy to impress the mother with the importance of keeping the diseased limb perfectly quiet. The local means to be depended upon will

vary somewhat in different cases. If the patient be tolerably vigorous, and if the parts are painful and tender, leeches will be useful. In such a case I would apply a few leeches, and perhaps repeat the application, but would not continue their use beyond this; but if the case was one in which little or no pain or tenderness existed about the joint, and especially if the patient, from bad living, or from any cause, showed marks of an enfeebled system, I would omit the leeches entirely. Early and efficient counter-irritation must be your chief reliance for extinguishing and preventing the full development of the disease. I am disposed to regard blisters as the best agents for this purpose at this stage, applied over the nates, and repeated, varying the point of application. These should be so repeated as to maintain a steady and continued counter-irritation. Other means are frequently employed, having the same purpose in view; friction with croton oil in one case, which came under my observation, seemed to produce an excellent result. Constitntional treatment during the early stage of the disease must depend greatly upon the circumstances of each individual case. The general health may be but little, or it may be materially disturbed. Good diet and tonics are required in many cases, particularly among the poorer class of patients, while in the strong and vigorous such a course will not be indicated. If by this plan of treatment the disease is not subdued, and symptoms of impending suppuration should appear, rest should still be enjoined, and counter-irritation should still be kept up; at this stage the issue is frequently employed, and I have great confidence in its ability to do good. Here we want, if possible, to prevent suppuration, and I know of nothing better for this purpose than an issue. There are several modes of establishing them, but I am accustomed to use the caustic in the manner formerly detailed. Dr. Gross recommends making an issue by the actual cautery, burning through the skin and subcutaneous cellular tissue, but no deeper. This certainly produces a sudden and powerful impression, and for this reason he says it is preferable. Whichever you employ, bear in mind that the issue must be maintained, perhaps repeated, so long as there is hope of preventing the formation of an abscess, and it may be that in this manner you will succeed in controlling the disease. But

suppose that notwithstanding all your efforts, matter forms, what course must be taken? If it is in small quantity, and slow in forming, you have still a little hope of its absorption; but if much is formed, the abscess should be opened at once. The longer you wait the worse it will be, for the presence of pus in any considerable quantity in the tissues will prove injurious. The opening should be made so as to exclude the air; you will remember the manner of doing this, which was given in a former lecture.

Now you may look for new symptoms. Hectic fever may now be expected with its accompaniments—emaciation, loss of strength, and perhaps loss of appetite—and the treatment must be directed to the support of the patient, and to carry him through the weeks, and perhaps months, and possibly years, of wasting and exhausting disease. It may be necessary to move the patient to a new locality for change of air, or to prescribe travel, being careful to keep the joint still. The use of cod liver oil, iodide of potash, iodide or other preparations of iron, will here be decidedly beneficial; at the same time care must be taken that the diet be abundant and nutritious, your object being to sustain the system by all the means in your power. There is very little to be done locally; open the abscesses, as they form, and wait, hoping that after a time, nature, aided by the general treatment, will be competent to the cure of the disease. And here I wish to say a few words upon a point of not a little importance.

As I have already remarked, you will expect an anchylosed joint in those protracted cases where recovery has followed great disorganization, and more or less loss of substance. Now, it will be very important to the future comfort of your patient that the limb be placed in a position best adapted for use, which should be in a line with the body. It may be difficult to accomplish this, but I think that with care at the right time this necessary object may be insured. I have been consulted by a gentleman who suffered from this disease in childhood, and recovered with the joint anchylosed so as to leave the thigh at nearly a right angle with the body; the limb being thus useless, he has repeatedly proposed its amputation. But we shall not always succeed in getting a recovery even with anchylosis and a shortened limb. The disease may

go on until at last the patient, exhausted and worn out, succumbs. Consequently other attempts have been made, and modern surgery has taught us that it is possible to remove the diseased bone, the head and neck of the femur, and even a portion of the acetabulum. This operation of resection has now been performed a good many times, and with sufficient success to establish it as one of the legitimate resources of surgery. It is not a very difficult operation, particularly when the head of the femur is out of place, lodged, as it frequently is, in an abscess and extensively carious, and where the muscles are so wasted that it may be felt covered by a thin layer, seemingly of merely skin and areolar tissue. It is difficult to lay down any general rule by which we may judge beforehand as to the propriety of such operations. Each case must be judged by itself. The cases are doubtless not very numerous in which such a procedure would be advisable; but as the operation is yet in its infancy, we are to look to the future in the expectation that, with the progress of science, observation will clear up much that is now doubtful or obscure. Conservative surgery is now making rapid progress—diseased joints are resected, and a useful limb saved, where but a few years ago amputation was unhesitatingly resorted to. I remember, when I was a student, to have heard a surgeon, with an air of manifest pride, speak of the large number of amputations which he had performed during his career. Such a boast at this day would be rather doubtful evidence of surgical skill.

ABSTRACTS FROM FOREIGN JOURNALS.

ON EPIDEMIC DYSENTERY.

By Professor Trousseau.

The year 1859 was remarkable in France for the prevalence of a terrible epidemic of dysentery. While in former years the affection has been observed only in circumscribed localities, it prevailed during the past year almost universally. Paris, too, which has perhaps been exempted from epidemic dysentery for a century, has had, on the present occasion, to pay a large tribute. Commencing toward the end of July,

the epidemic attained its maximum in September, undergoing a notable diminution in intensity towards the end of October. Of all epidemic diseases, dysentery is the most murderous, typhoid fever, cholera, diphtheria, variola, and scarlatina being but as child's play compared with it. These affections prevail only accidentally, while dysentery decimates whole populations, returning at certain fixed epochs, as every three years, for example. Desgenetts declared that it killed more soldiers than the enemy's cannon did between the years 1792 and 1815. The etiological circumstances of the invasion of an epidemic may be quite inappreciable. Thus, at Tours, there are two barracks placed in identical hygienic conditions, and yet, during thirty years, it has always been the cavalry barracks in which dysentery has prevailed epidemically. The reputed effects of the excessive use of fruits in generating the disease is very doubtful, seeing that it sometimes rages when fruits are very scarce, as in 1859, while it may not be met with when they are in excessive abundance, as in 1858.

Passing by M. Trousseau's description of the disease, we come to his account of the treatment. His right to speak with some authority upon this point, is derived from the fact of his having witnessed four epidemics of the disease at Tours, Versailles, and Paris, during which the victims were either young and vigorous soldiers, aged men and women, or young children. Moreover, as Reporter on Epidemics to the Academy he has to peruse the accounts of the various epidemics which appear throughout France. Some thirty or forty years since the traditions of the former age were abandoned, Broussais sweeping away the whole of the empirical modes of treatment in favor of his doctrines. In fact, with an inflammation so violent in view, it was then difficult not to give in to them; and the antiphlogistic treatment was put freely into force, and when unsuccessful, this was believed to be because it had not been carried far enough. In 1823 or 1824, however, M. Bretonneau, imbued with the medical doctrines of Stahl and Sydenham, set on foot a reaction against the doctrines of Broussais, by resorting to a substitutive mode of treatment. He gave an ounce of the sulphate of soda internally, and administered the same dose in a very copious enema, once or twice a day, continuing the practice as long as the stools remained bloody. As soon as they became bilious and serous, the sulphate was only given once a day, and afterwards at still rarer intervals. In 1828 or 1829, M. Trousseau published an account of an epidemic treated with success in this manner. In 1842 an epidemic occurring in the garrison at Versailles was similarly treated, but with less marked success; however, at all events, the military surgeons in attendance—almost all pupils

of Broussais—agreed that the sulphate of soda was preferable to blood-letting. Unanimity in favor of neutral salts, of one kind or another, has also nearly prevailed in the reports addressed to the Academy from all parts of France. Frequent failures have undoubtedly occurred, but, in general, when advice is sought early, considerable and extremely rapid success is the result. Induced by the success of the calomel treatment employed by the English at Gibraltar, M. Trousseau has several times put it into force, and frequently with good effect in severe cases of dysentery, occurring, however, sporadically. He still resorts to it when the weather is very hot, but in cold and wet seasons he has found salivation and other ill consequences resulting from its employment. In children, too, who can only be got to take the sulphate of soda with the greatest difficulty, he prefers giving calomel. Ipecacuanha, which was so much in vogue during the last century, is now seldom employed. Opium is one of the sovereign resources of the *materia medica*, and is perhaps the pharmaceutical substance with which most harm may be effected. It is in incessant use, and is strangely abused, being, in M. Pidoux's happy phrase, the "knout of the therapeutist." With it every patient who complains or suffers is fustigated. In vain may you try the rational procedures consecrated by usage, and in vain do you appeal to your intelligence and your experience—all goes for nothing—pain is present, and the indication which dominates all others is to assuage such pain, for which opium must be prescribed. With such logic as this we make but a bad business of it, or may engage in a very perilous work. A distribution of opiates with easy compliance is the mark of an impatient and ignorant practitioner. It is a very convenient procedure, and one to which every capacity is competent, which consists in "drying up the intestinal canal" by laudanum in a case of diarrhea, and in roughly imposing silence upon the symptom pain in a case of dysentery attended with horrible tormina. "I do not pretend to say that, after having put into force the evacuant treatment, that we must never, when the patient is suffering cruelly, temper his pain with a few drops of laudanum, but I entirely object to the practitioner at once drying up the intestinal canal (for this is the aim) in a case of diarrhea or dysentery. Let him not meddle with opium except with cautious reserve, or he will be the cause of the typhoid symptoms, which will soon make their appearance." After passing in review the various other means of treatment, to which he does not seem to attach much importance, M. Trousseau adds, that all these means will be of little avail if not adopted prior to the occurrence of important pathological changes. Otherwise, every effort will

be paralysed, and no means will avail against the horrible ravages of an epidemic. In conclusion, above all things, let the condition of the diet be attended to, for this is of vital consequence. Insist that two, three, or even four quantities of soup (*potage*) be taken daily, and prescribe feculent drinks, as barley and rice waters. In all the comparative trials which have been made of treating dysentery by rigorous abstinence, or by allowing aliment in wise moderation, advantage has attended the latter procedure.—*Gazette des Hop.*, Nos. 10 and 14.

ON HEREDITARY SYPHILIS.

By M. Notta.

In a paper published in the fourth volume of the *Memoires de la Societe de Chirurgie*, by M. Cullerier (*a*), its author endeavored to demonstrate that the hereditary transmission of syphilis is due only to maternal influence—the male parent exerting none. The transmission may take place at any age of fœtal life, and at all periods of the internal infection—during the existence of the chancre, during the course of secondary or tertiary symptoms, and in the interval of these constitutional manifestations, although the mother may present every appearance of a flourishing state of health. The chief objection to M. Cullerier's views was, that they were based only upon two carefully observed cases; and it is in answer to his appeal for a further investigation into the subject that M. Notta, Surgeon of the Lisieux Hospital now adduces several cases since observed by himself, with great care and circumspection, uninfluenced by any preconceived opinion upon the subject. These cases are completely confirmatory of M. Cullerier's views. Eleven in number, they really comprise eighteen observations, since, in two of them observation was extended to two births, and in one to six. In twelve of these eighteen instances the fathers at the time of conception had syphilitic symptoms, the mothers being healthy, and the children were born healthy. In two instances the fathers had no syphilitic symptoms, although heretofore they had suffered from the disease, and here, too, healthy children were born. In one instance the father neither had, nor ever had had syphilis, but the mother was formerly syphilitic, and the child was born syphilitic; and in three instances, father, mother, and offspring were all syphilitic. Thus, whenever the mother was healthy and never suffered from syphilis, the child was always exempt, whatever might be the condition of the father

(*a*) Vide British and Foreign Medico-Chirurgical Review, January, 1857, vol. xix., p. 156.

in this respect; while, whenever the mother has, or has had, syphilis, although all manifestations may have disappeared, there is a great chance that the child will not reach its full time, or will be born with a congenital syphilis. M. Follin also has informed the author that he has never met with a case of congenital syphilis, without the mother herself being syphilitic. It is not meant to be stated that whenever a woman has had syphilis, she must always give birth to syphilitic infants. The hereditariness, although frequent, is not invariable. The objection which the partisans of the hereditary transmission by the father may advance, that in some of the author's instances the women may have played false to their husbands, so as to leave the true paternity of the children in doubt, is anticipated by the author; and he states that he has taken the most scrupulous care to establish his convictions upon this point—a matter of much easier accomplishment in the provincial town where his observations have been made than it would be in the capital. These cases, then, scrupulously observed, corroborate M. Cullerier's views, and besides their scientific interest they are of importance in reassuring fathers whose early lives may have been attended with syphilitic manifestations that these will not be entailed on their offspring in after years.—*Archives Gen.* 1860, tome i., pp. 272–284.

THE BRANDY TREATMENT IN ACUTE DISEASES.

A London correspondent of the *Wiener Medicinische Wochenschrift*, No. 26, in treating of the prevalence of Dr. Todd's treatment of acute diseases in London, expresses his opinion that it might be introduced with great advantage in Germany; for, although practitioners are there beginning to learn not to enfeeble their patients by blood-letting, they do not administer support to the nervous power in acute diseases; so that, while they do not do so much harm as heretofore, they still do not do so much good as they might do. He admits, however, that Todd carried his stimulant treatment somewhat too far, especially at the commencement of acute affections, when there is no loss of power. At a later state, however, no doubt can exist that the systematic administration of alcohol is attended with the best consequences; alcohol being, in Todd's view, not a medicinal agent, but a nutritive aliment of the nervous system. In the convalescent stage of typhus, as well as in the second and third week of this disease, and in many cases of pneumonia, the systematic administration of brandy saves many a life. An anecdote, illustrative of this subject, is told by Skoda. A peasant suffering from pneumonia was given

over by his attendant as hopeless. A notary was summoned to make his will, and many of his friends attended. While waiting for the official, some strong schnapps was passed round to the guests, and the dying man with feeble voice implored a glass from the well-known bottle. A refusal to one doomed to death could not be given; but the patient, finding himself so much better after the first glass, speedily repeated so agreeable a medicine, which soon effected a recovery, in vain attempted by pill and potion. The correspondent adds, that the assistant physicians of the London hospitals manifest a remarkable predilection for this brandy treatment, exhibiting it even when their seniors have expressly countermanded it. "I have known many cases in which one of the most distinguished hospital physicians, desirous of experimenting upon the treatment of typhus and pneumonia, has positively forbade a drop to be administered. The patient becoming worse towards evening, the assistant physician has been sent for, and, finding the case urgent, after in vain trying camphor, musk, etc., gives the patient brandy at short intervals, preferring to save life to obeying the orders which have been left. The symptoms yield, the patient sleeps, and in the morning is 20 per cent. better. The physician arrives at nine in the morning, and proclaims the case to the pupils crowding around the bed as an example of the uselessness of the brandy treatment—not a single drop having been administered!"—*Medical Times & Gazette*, July 28th.

ACUTE NEURALGIA CURED WITH THE AID OF THE CONTINUOUS GALVANIC CURRENT, WITH PECULIAR SYMPATHETIC EFFECT UPON THE UTERUS.

By Harry Lobb, M.R.C.S., Etc.

The following case will be interesting, not only to those who look upon galvanism as a valuable therapeutic agent, but to the physiologist, who may perceive a peculiar sympathetic or searching action of the galvanic current, whereby the real organ in fault is sought out by the fluid, and the reflex action of the nerves demonstrated.

I was sent for on the 29th ult. to see a lady suffering from the most acute neuralgia of the nerves of the upper and lower jaws and temple of the right side. She could obtain no relief from the remedies she had tried. The week previously she had been attacked with neuralgic pains in the right knee; but this had departed since the appearance of the pain in the jaws. Her age was about forty-six, and she had not menstruated for seven months; otherwise she was in tolerable health. Her teeth had been examined by a dentist and pronounced sound.

I applied the continuous galvanic current to the jaws and temple with the aid of a Pulvermacher battery—the positive pole beneath the ear, the negative to the various painful parts—for half an hour. I left the battery, explaining its use, and desired it to be applied the moment there was any return of pain. This did not occur till the evening, when it was applied, and the lady had a good night, awaking free from pain. She passed the day well; but about 1 A. M. on Tuesday (the 1st inst.) she had the most acute agony in the upper jaw it was possible to conceive, when the current was applied, and she fell asleep in the midst of it. She awoke in the morning free from pain, menstruation having come on during the night; this has progressed favorably, and she had no return of the neuralgia.

This might be considered by some to be an accidental coincidence, and not induced by the galvanism; and this plea I should allow if I had not already had several allied cases where the same effect had been produced in the same manner, and quite as unexpectedly; for I did not learn the condition of this lady until afterwards.

I have frequently observed that galvanism has this peculiar power of selection: that although, through pain or some other cause, the current may be applied to a part or organ, some distant and hitherto unsuspected organ is stimulated by it, and pain is removed, at the same time secretion is induced in a complementary gland.

Brook street, June, 1860.

—*London Lancet for August*, 1860.

THE TREATMENT OF DELIRIUM TREMENS.

The patient, a cabman, aged about thirty-three, long addicted to hard drinking, and now in the fourth or fifth day of his third attack of delirium tremens, affords a good illustration of some practical points in the cure of this dangerous malady.

His face is wild, flushed, and perspiring, and his noisy, struggling delirium, which has been incessant during the twenty hours now past since his admission, evidently, from his language, swarms with the delusions incident to this state. Among these may perhaps be included that of expecting us to know all his symptoms, without any observation or inquiry, every approach to which he treats as an insult.

However, we want little oral information. His pulse, though very quick (120), is wiry rather than feeble. His epigastrium is tender. His tongue, dry and furred, with red edges, is very tremulous. These facts, taken with those just stated, and the circumstance that his present attack winds up a tolerably con-

tinuous debauch of some ten days' duration afford a clue to what will probably be a successful plan of treatment.

Opium and the "habitual stimulus" are usually regarded as the specifics for this malady. Confessing their frequent value, I would warn you against any but their casual and deliberate use. In other words, apart from some special risks occasionally contra-indicating them in even moderate doses, in this as well as some allied states in which they would otherwise be demanded, there seem to me great perils from their copious administration as a matter of routine.

Let us try to reason out the therapeutics of the malady. How do people die of uncomplicated delirium tremens? Generally, I make bold to say, of exhaustion. And what exhausts them? The perpetual delusions, ravings, shoutings, movements of this state. It is a most invidious analogy to offer; but I venture to say that any one who has ever spoken in public for one hour together, would, if he multiplied that hour by the factor requisite to bring it up to the many days sometimes passed in vociferous delirium by a patient, quite understand the perilous degree of exhaustion necessarily present. Besides, the morbid impressions are scarcely less injurious and fatiguing than the actions of the delirious state. Sensation, if varied and intense enough, is very hard work for the nervous system. Every one who has ever foolishly attempted to "do" a gallery of pictures must allow that it is easy to tire out the brain through the eyes in a very short time.

The first indication of treatment, then, is to prevent exhaustion; and in fulfilment of this, there is much to do and to avoid. A comfortable room, preferably well lit as well as aired; a good nurse, with quiet, decisive, fearless manners; an absence of all that is likely to excite and irritate—if possible, that is, a separate ward. Above all, no mechanical restraint.

This prohibition can not be too stringently enforced. No matter to what degree reason may be degraded or dethroned, the delirious patient always seems sensible of the debasement and brutality implied by straps and bands. If one nurse could not restrain a patient, I should call in two, or ask for the further assistance (always generously given) of any or every convalescent in the hospital. But I should never strap or tie down a patient, however delirious. I suppose, in the last seventeen years, I have seen and treated a fair proportion of such cases. But though I have once or twice walked up to a raging patient whom nobody had for hours dared to approach, to loosen his bonds, I never had occasion to regret it. Indeed, I have always found that the more limited, temporary, and casual that graduated restraint of the patient which the hands

of others afford, the better. Watching and persuasion generally suffice.

The same indication, again, dictates the drugs to be administered. That there are instances in which a delirious patient, exhausted by long habits of tippling, or prostrate under some independent disease or injury, is best treated by the stimulus he has latterly been deprived of, I do not deny.

The subject of our observations, however, not only illustrates the golden rule of Practical Physic—to treat the case, rather than the malady, and to avoid giving such and such drugs merely because the disease is diagnosed to be so and so—but represents, I think, that common and important variety of delirium tremens in which this routine treatment is specially to be avoided.

In plain English, when a patient comes to me with delirium tremens as the climax of a long debauch, I generally find that this state is modified by two other circumstances. He *is* more or less drunk, on the one hand; he *has* more or less gastritis, on the other. His furred tongue, his tender epigastrium, the nausea (or even vomiting) occasionally noticed, are, doubtless, associated with a condition which I have verified after death in the gastric mucous membrane—a firm, white, condensation of the cell-growth, and a deep congestion of the adjacent vessels, such as, for want of a better term, we may roughly call "inflammation."

Both of these circumstances prohibit the administration of alcohol and opium in their ordinary forms and doses. To what purpose, when a man is already raving drunk, should we give additional quantities of the poison which has made, and is keeping him so? What, again, will opium often do, save increase this drunkenness? Combined with alcohol, opium is, for most races and idyosyncrasies, a stimulant rather than a sedative. Indeed, even when taken alone, opium often acts as a stimulant upon the Malay, the Turk, the Hindoo—aye, and on many an Englishman quite unaccustomed to its use. And I am sure that, given in any but the most overpowering or dangerous doses, it oftener increases than lessens the ravings of the delirious patient; while it certainly so far obscures the symptoms, that after its sufficient (*i. e.*, copious) administration, you must often remain in doubt whether the patient dozes because he is half poisoned, or because he is half cured.

Furthermore, as respects the gastric lesion, what, in the name of common sense, are large doses of alcohol to do? To increase inflammation; to add fuel to the fire; to constitute an additional source of the pain, fever, delirium, sleeplessness, which gastric irritation alone amply suffices to provoke? Thus much at any rate might be alleged, that their supposed

benefits could hardly be deduced or explained, by Rational Medicine, unless it were presumed that, in this instance, the general effects of alcohol counterpoised that aggravation of the local injuries which its introduction into the stomach would necessarily provoke. But to this generally beneficial effect we have already demurred; so that we need hardly point out that, granting it useful in this way, there could scarcely be a more clumsy, ineffectual, and dangerous mode of administering it, than by pouring it, in large quantities and a concentrated form, into an inflamed organ itself essential to life.

Much might, I think, be said for emetics and cold affusion in well-chosen cases of this kind. But is this instance neither of these two measures seems necessary. Two special attendants; a separate ward; a full dose (fifteen minims) of ipecacuan wine, with a little (seven minims) laudanum, and (ten minims) chloric ether, well diluted, every three or four hours; some three or four ounces of brandy, largely diluted, in the twenty-four hours; and mustard poultices to the epigastrium, are all that we need now order. A mutton chop, to be taken as soon as he wakes from his first sleep, completes the prescription.

The action of ipecacuan, thus guarded and combined, I will not now dwell upon, further than to say that it seems to effect a two-fold benefit: to allay cerebral congestion and excitement, on the one hand; and to provoke gastric and intestinal secretion, on the other.

[The patient became gradually calmer, and in twelve hours fell asleep. The next day he was quiet and rational. Under full diet and stout, with bark, he recovered so rapidly as to leave the hospital, cured, in five days.]—*Ibid.*

ST. MARY'S HOSPITAL.

Strangulated Oblique Inguinal Hernia—Mortification of the Bowel—Operation—Artificial Anus—Recovery.

(Under the care of Mr. Coulson.)

The difficulty of constructing trusses which shall accurately and comfortably retain every variety of rupture is admitted, and this difficulty is oftentimes the fertile source of strangulation. It is especially among working men that this dangerous result is found; the pain, inconvenience, or costiless of various trusses which they may have employed, and the readiness with which complete or partial reduction of the hernial protrusion is effected at the end of the day, induce them to forego the use of any truss. For many years this reduction is daily

effected, until accident brings down a larger portion of bowel than usual; reduction is then difficult, sometimes impossible, and thus dangerous strangulation occurs. In the subjoined case, the strangulation was so acute as to produce mortification of the bowel and an artificial anus; the patient, however, ultimately recovered.

W. C——, aged forty-eight, was admitted into the operation ward of St. Mary's Hospital, under the care of Mr. Coulson, with strangulated inguinal hernia. The rupture was of eighteen years' standing. He had worn trusses specially made for him at different times, but they had caused him so much pain and inconvenience that, after various trials, he had entirely abandoned their use. The swelling had never greatly exceeded the size of a pigeon's egg, and the major part of it had been easily reducible, a small portion, as the sequal showed, remaining irreducible. The day before admission he found a good deal of bowel down, and was unable to return it. The taxis, warm bath, and castor oil had been ineffectually employed prior to admission. The hot bath, taxis, and chloroform having failed, Mr. Coulson proceeded to perform herniotomy. The sac was opened; no fluid escaped, and the bowel was seen to be black in color, but still retaining a glossy surface. Another portion of bowel was found in the sac, not strangulated; it was adherent and irreducible. Mr. Coulson liberated the stricture by introducing a blunt-pointed bistoury guarded by the finger, and dividing directly upwards returned the strangulated intestine, leaving in the sac the non-strangulated portion, which was firmly adherent. The incision was closed by suture, and a dose of opium administered to the patient.

He slept well during the night, but next morning his pulse was 100; he complained of pain in the groin, flatulence, and thirst; the eyes were sunken, and he sweated profusely. He was well supported. It was necessary to draw off the urine.

On the third day, the bowels not having acted, an enema of castor oil was administered, which produced a copious evacuation. Pulse 130; much flatulence, sweating, troublesome cough, and pain in the groin. One suture removed. Charcoal poultices were now applied to the wound, which discharged freely a fetid matter. He was weak, and complained much of abdominal and inguinal pain. The bowels were again opened.

Next day the sutures were wholly removed, and cataplasms continued. The wound now discharged fæcal matter. As it gaped more freely, the sac was found to be partially sloughing, and a portion of intestine also. Enemata produced natural motions, but free discharge of fæcal matter existed at the groin.

After a time the wound cleaned under the applications

which Mr. Coulton directed to be made to it, and began gradually to contract, so that five weeks after the operation the opening had nearly closed, and the motions passed entirely by the rectum. This lasted for some days, when the fæces once more broke through the opening in the groin, and from that time they continued to do so. Tonic and sedative remedies were adopted, and the patient was discharged in a fair state of health.—*Ibid.*

CANCER HOSPITAL.

Variety and Number of Cases of Cancer Affecting the Female Breast.

(Under the care of Dr. MARSDEN and Mr. WEEDEN COOKE.)

If any one fact more than another has attracted our attention on examing the patients at Cancer Hospital, it is the healthy appearance which they present after being a short time under treatment, owing to the system here adopted of attending to the general health from the beginning, by good diet and tonic remedies. From the course thus pursued, the unhealthy and offensive discharges become diminished, and assume an altered character, and the constitutional powers proportionably gain strength and activity.

Of thirty-eight patients who presented themselves for treatment of the 15th ult., six were males, and thirty-two females. Among the former were—a case of cancer of both eyelids, of four years' duration, in a man aged sixty-two; a second instance, in a patient aged sixty-five, the globe of the eye being concealed; a case of cancer of the glans penis, of three years' duration, in a man aged fifty-four; of the rectum, in a man aged sixty-seven; a case of lupus of the right eye, in a man aged seventy-three; and epithelial cancer of the lower lip, in a man aged forty.

The breast was the seat of the disease in twenty-nine out of thirty-two females, the left being affected in seventeen, and the right in twelve, five only being in an ulcerated condition. Of those which were not ulcerated, there were probably about three which were not actual cancer, although the patient solicited advice under the belief that they were laboring under this disease. Thus, a woman, aged thirty, had a small tumor in her right breast, which came on after suckling, four years and a half ago, but which is now diminishing after treatment. She had been subject to pain in this breast for thirteen years. Another patient, aged forty-one, possessed what was most probably an adenocele, of the size of a walnut, which began to grow when she was eighteen years of age. While a third, a healthy-looking young woman, twenty-eight years of age,

had irregular induration of the right breast, which supervened upon suckling her only child, and has remained persistent; it is not painful, and is not carcinoma.

The ages of the patients varied considerably; nine were under forty, and twenty over that period, the oldest being seventy-six years. In the last, the disease had commenced in the left breast two years ago, and was extirpated by Dr. Fergusson with the knife at King's College Hospital twelve months back. The patient made a good recovery and left the hospital, but the disease returned in the cicatrix three months afterwards, and at the present time it involves the neighboring parts, with the appearance here and there of prominent red and shining tubercles.

The experience of the surgeons at this hospital goes to prove that the disease returns at a much earlier period when caustics have been employed for its removal in preference to the knife; and this, we believe, agrees with the views of most of other hospital physicians.

In many of the patients, the entire gland was affected, often much enlarged, and covered with red shining tubercles; some had undergone atrophic absorption, and the disease was kept in abeyance for years. The extent of glandular implication varied from tumors of the size of a walnut to that of a large orange.

An instance presented itself of that rare form known as the "cuirass" cancer, the disease commencing near one shoulder, spreading downwards, involving the mamma, and extending across to the opposite side of the chest, and attacking the other breast. The whole chest anteriorly was embraced by the cancer, like a cuirass—hence its designation. A good illustration of this variety is figured in Velpeau's "Cancer of the Breast," translated by Mr. Marsden: in that instance, hard or ligneous scirrhus, in plates, affected the whole of the integuments of the breast and the two mammæ, in a young woman. The age of the patient at Cancer Hospital is sixty-four; she is the mother of five children, appears to possess a good constitution, and the disease is of two years duration. The right arm is affected with the brawny œdema characteristic of cancer, and indicates the hold it possesses on the system.—*Ibid.*

ON TYPHUS AND TYPHOID FEVERS, AS SEEN IN DUBLIN.

By Henry Kennedy, M.D.

The object of the communication was to show that while these types or varieties might, in the great majority of instances, be distinguished the one from the other, they were

still but the results of a common poison. To the distinctive marks between the two varieties he had drawn attention, in the Dublin Medical Journal, as far back as the year 1837, three years before the appearance of Dr. Stewart's memoir. The arguments for the identity of the poison the author divided into *general* and *special.* Among the former, he particularly dwelt on the fact of different types of fever coming from the one room; such as cases with and without spots, or some with dark and others with red spots, or the congestive, nervous, and gastric fevers all existing in one family and at the same time. Among the special arguments, the details of some cases were given where petechiæ existed together with ulcerated bowels; and also cases of the same variety where the two rashes were mixed. The author also noticed the fact that intestinal hemorrhage was at least as common in typhus as in typhoid fevers—contrary to what is usually thought. In conclusion, the author glanced at the views now held by many on the stimulant treatment of acute disease. He observed that the extent to which these doctrines were carried elsewhere had not reached Dublin, nor did he think they would; and he considered there were many points, directly involving the general question, which yet required the fullest consideration. Though the author did not enter at all on the general treatment of fever, he spoke of a few points having a special reference to the treatment of typhoid fever. In particular, he drew attention to the necessity for making a distinction between the stimulants in common use, of which wine and beef tea were instanced. In his experience, the effects of the former were much less likely to be followed by any unpleasant results than those of the latter; and this he had remarked not only in fever, but also in some of the phlegmasiæ. The cause of this difference Dr. Kennedy attributed to the difference in the constituent parts of the two fluids. To the carbonate of ammonia he also directed attention, as being in general use; and yet, in his experience, he had found it very apt to cause diarrhea, and latterly had entirely given it up. The medicine he now placed the most reliance on was the dilute sulphuric acid; and he had arrived at this conclusion after having tried the ordinary astringents. The acid, however, was not a new remedy. With the acid he always joined local treatment, such as leeching and blistering; nor of its efficacy—when used with ordinary discretion—had he the slightest doubt, notwithstanding all that had been recently urged against it. In the last place, the author spoke of a certain class of cases of typhoid fever in which it seemed as if the poison were flitting about the system, at one time attacking the abdomen, again the chest, or the brain. In such cases he had adopted

the expedient of keeping a blister open, usually on the chest, for some days; and from this plan he had seen very marked advantage.

Dr. A. P. Stewart said that Dr. Kennedy's paper had disappointed him. It contained nothing which refuted the facts and principles advanced by Drs. Jenner and Murchison, and other writers upon fevers, and which were now generally accepted by the profession. The fact that the petechial eruption of typhus and typhoid fevers might coexist, had been long known. Sometimes, indeed, it was found connected with scarlet fever and other eruptive diseases. The real point of importance in the question was this: Are the two eruptions so far identical that they might both become dark, semi-petechial, then petechial, and not disappearing under pressure? From a long observation of the two fevers, he had ample opportunities of testing the question, and he had never witnessed a case in which the eruption of typhoid fever had ever become petechial or dark. This held good even in extreme cases, the last crops of typhoid fever eruption being as bright and rosy as the first. On the contrary, the typhus, as the gravity of the case increased, had a constant tendency to become dark and petechial, and did not disappear under pressure. Dr. Kennedy's paper did not contain that large basis of fact which was necessary to establish his proposition.

Dr. Murchison said that the records of the London Fever Hospital were diametrically opposed to the experience of Dr. Kennedy as recorded in the paper. During the last twelve years, four thousand cases of typhus and two thousand of typhoid fever had been admitted into that institution. Of these, seven hundred cases of typhus and four hundred of typhoid fever had proved fatal. These cases had been fully and completely recorded, and those ending fatally were examined after death. Now, in no one instance had the characteristic eruption of typhus fever been observed during life, and the characteristic lesion of typhoid fever been present after death. The converse was also always found to obtain. His (Dr. Murchison's) experience of the diseases in Edinburgh was of a similar character. It was supposed by some that when diarrhea appeared as a complication of fever the disease was necessarily of the typhoid form, and that the appearance of petechiæ indicated the existence of typhus. But this was a grave mistake. Diarrhea was no unfrequent complication of typhus. In the Crimea typhus was often complicated with dysentery. In no instance, however, of such complication was typhus fever, as proved after death, attended with ulceration of Peyer's glands. Petechial eruptions were not characteristic simply of typhus, but existed in many diseases which

were not idiopathic fevers, and they were quite distinct from the bulloid or mulberry rash of typhus fever. In a case which had been recorded in the Lancet by Dr. Kennedy, he stated that the rash of typhoid fever was present during life, and that after death there was no ulceration of Peyer's glands. But Dr. Kennedy in this case had given a description really of the eruption of typhus fever, and hence the conclusion which he drew was erroneous. The eruption of typhus appeared all at once within a period of one or two days, continued during the whole length of the fever, and got darker every day. The eruption of typhoid fever, on the contrary, came out in successive crops, not becoming, as the author stated, converted into petechiæ on the fourth day, for by that time the characteristic eruption of typhoid fever was disappearing. The identity of typhoid and typhus fever was no more proved by the occasional coexistence of the two eruptions, than the coexistence of the eruption of typhoid fever with scarlatina, which he had observed in seven or eight cases, was proof of the identity of these diseases. Dr. Murchison then criticised with some severity the mode in which Dr. Kennedy had recorded his cases in the paper read before the Society, and contended that the descriptions which he had given were so meagre and incomplete that they could not enable us to arrive at a just conclusion as to the exact nature of the cases which he had recorded.

Dr. Webster said he wished Dr. Kennedy had entered into the question of the comparative prevalence of the disease at the present time and formerly, also the period of its attacks and the relative susceptibility of the two sexes. Fever was most fatal in Sweden in the coldest seasons, and among the male sex. It was most prevalent in the hot months in Spain, and was more fatal among females. It had always been a fearfully fatal disease in that country. In 1857, fever ravaged Lisbon, and was most severe in the month of October. Three men to one female died, women and children being rarely attacked by it. More women than men died from fever in England; but the disease was less prevalent in this country and Scotland than it was twelve years ago.

Dr. Jenner had paid great attention to the subject of fever for the last fourteen years. For six or seven years he had spent seven or eight hours daily in the Fever hospital, and had recorded with great care each case that came under his notice. Of late years, his experience had been less extensive, but it had served to confirm the opinions at which he had previously arrived. Ample experience had proved to him, that the state of the intestines after death could be predicted from the nature of the eruption. The presence of petechial

eruptions was not confined to cases of fever. It existed in severe cases of erysipelas, small-pox, and scarlet fever; but this afforded no proof that these diseases were identical. Dr. Kennedy had remarked, that in order to arrive at a full knowledge of fever, it ought to be studied all over the world; but it had been so studied. On the banks of the Bosphorus, Dr. Parkes had found that the Turkish physicians recognized the distinction between typhus and typhoid fevers. In Dr. Flint's report on fever in India, the same distinction was made. Dr. Kennedy had supposed that it was generally believed that typhoid fever was symptomatic of intestinal lesion; but this was not the case. He (Dr. Jenner) had published some of his early cases with the intention of showing that the fever and the lesion bore no relation to each other. As a patient might die of virulent small-pox almost before the eruption had appeared, so typhoid fever might prove fatal from the general disturbance of the system, with very little intestinal lesion.

Dr. Wilks had been taught that typhus and typhoid fever were identical, and he was somewhat prejudiced in favor of this opinion; but he had, on the publication of Dr. Jenner's cases, ten or eleven years ago, commenced testing the subject afresh in the wards of Guy's Hospital. The result of this investigation was his conviction that the two diseases were altogether distinct. He thought there was sufficient cause to establish the distinction in the anatomical differences which presented themselves—the presence of the lesions in the one case, and their absence in the other. His investigations had been sufficient to convince him that the number of cases in which there was a difficulty in diagnosing typhus from typhoid fever was less than the number of those in which it was found difficult to diagnose between fever and chest, or lung and heart disease. Whatever difficulties existed in either case were removed by the post-mortem appearances. It must be acknowledged, however, that in some instances during life there was considerable difficulty in deciding between cases of typhus and typhoid disease.

Dr. Wynn Williams had heard nothing to alter his opinion as to the non-identity of the two diseases. During the epidemics of typhoid fever and small-pox which he had observed in the neighborhood of Llamberis, the presence of petechiæ in children was not uncommon. Even when no epidemic prevailed, he had frequently found petechiæ in children, whose health had been impaired from deficiency of food or other causes. When petechiæ were present, he could never get a proper vaccine vesicle, and had found it necessary to restore the health by tonics previous to the performance of vaccination. He differed from Dr. Kennedy, in thinking that hemor-

rhage was beneficial. During an epidemic of typhoid fever, he remembered the case of a woman which was nearly fatal from the profuse discharge of blood from the bowels. He had succeeded in arresting it by an injection of two drams of tannin to a pint of water. He had tried this remedy in several cases, and always with a successful result.

Dr. Barclay had no doubt that the conclusions at which Dr. Kennedy had arrived had been founded on a large number of facts. For himself he was unable to give an opinion one way or the other. He agreed with Dr. Wilks that the anatomical lesions which presented themselves constituted the most important point of consideration. When registrar of St. George's Hospital, he had made special notes of all cases of fever in that institution. A careful study of the "reports" which were issued from time to time, recording the distinguishing characters of fever spots, had convinced him that these descriptions were not in harmony with the appearances which presentedthemselves on the bodies of patients. With regard to the duration of the spots in typhoid fever, which Dr. Murchison limited to four or five days, he had known them last fourteen or fifteen days. He regarded as one of the great difficulties which presented themselves in coming to a decision on this question, that arising from inaccuracies in the description of these spots from the beginning to the termination of the attack.

Dr. Jenner remarked that the real point of importance was not the length of time the spots lasted, but whether they passed into true petechiæ, and became ultimately ineffaceable by pressure.

Dr. Kennedy in reply, said he could do so only generally. More than one of the speakers had stated that petechiæ were not uncommon in other diseases besides typhus fever. While admitting this well-known fact, he did not see how it affected the question at issue at all. He had assumed that petechial spots when united with the symptoms of fever, constituted typhus fever; and he had yet to learn that this was incorrect. Other gentlemen thought the details of the cases too brief. But he (the author) was at a loss to understand how any minuteness of detail could alter the fact that petechiæ had been found in connexion with ulceration. The details of the cases had been purposely of the briefest, because much had to be compressed into a small space; and this was so with the last case given, even when sent for publication to the Lancet; for he was well aware of the great pressure on the pages of that well-read journal. By some of the speakers he had been understood to say that in this last remarkable case the rose lenticular spots had become changed into petechiæ. This was an

erroneous impression. What he did state was, that petechiæ had been superadded to the typhoid rash. One gentleman argued that the result of pressure on the different kinds of spots was enough in itself to separate the two types of fever. He had not found that this difference exists; and Dr. Watson—no mean authority—bore him out in it. He could have wished that some gentlemen present had noticed the important fact in reference to the hemorrhage, whether intestinal or from the nose, and which he had found at least as frequent in typhus as typhoid fevers. The meeting would observe that in any thing he (the author) had advanced he did not stand alone; and for proof he referred to the able works of Huss, Flint, and Bartlett, all of whom had given cases fully as striking as any detailed by himself. In the last place, he was glad to find that some of the speakers were so familiar with the fact that the varied rashes of fever were often combined. To prove this was one of the main objects of the paper; and when it, together with the other anomalies to which attention had been drawn, were more generally recognised, he was fully persuaded that the current views of the day would be materially modified.—*Ibid.*

DYING DECLARATIONS.

The practice of the law relating to the admission in evidence of the declarations of dying persons has a special interest for medical practitioners. We need not do more than advert to the numerous cases of death by violence or poison in which justice would be frustrated were not dying declarations admissible. In such cases medical practitioners are liable to be called upon to give evidence. It will frequently happen that a medical opinion must determine the circumstances under which a declaration coming under this description should be taken. It should be borne in mind that the law is justly jealous of any departure from the ordinary rules of evidence. The admission of dying declarations is held to be a marked departure, only to be justified by grave and exceptional conditions. The Lord Chief Baron Pollock has recently declared "that the admissibility of such evidence at all is an anomaly and an exception to the general rule and law of England, and it ought not to be extended." It may be stated that the two main securities for the truthfulness of evidence are—first, the solemnity of the oath taken by witnesses in courts of law, and the liability to prosecution for perjury if they be found to swear falsely; and, secondly, the subjection to cross-examination. In the case of dying declarations the latter security is altogether wanting, and a very serious defect it is. Those

who have had much experience in courts of law will know that a skillful cross-examination is frequently of striking use in eliciting the truth and correcting error in the case even of a conscientious witness; and all must place the highest value upon this ordeal as a check upon the utterer of false testimony. In regard to the first test, also the oath, it must be remembered that it only on the hypothesis that a person feeling himself to be dying, and that he is on the point of answering for the truth of his statement before a higher than earthly tribunals, is assumed to be in a position equivalent to that of taking an oath. Viewing human nature as we find it, there can be no doubt that a declaration made under such circumstances is, as a rule, at least of equal value with that of an ordinary statement or oath. But men have been known to die with false accusations against others upon their lips; and it is therefore obvious that the jealousy with which the law regards this kind of evidence is justified.

Acting in this spirit, the admissibility of dying declarations has been considerably restricted within recent times. In Lord Mansfield's time, a century ago, it was held that "any declaration *in extremis* was admissible on the ground that the solemnity of the occasion was equivalent to a declaration on oath." The opinion that this rule still holds its full application is prevalent with the public. But the rule, as we shall see, has been considerably restricted. In the recent case of Regina *v.* Hind, the question was distinctly brought forward. The prisoner was tried for feloniously using certain instruments upon the person of a woman with intent to procure her miscarriage; and on the trial, a statement made by the woman when dying was offered in evidence. It was objected to on the part of the prisoner, but was admitted by the judge. The prisoner was convicted, and the point was reserved. The objection taken was that, although a dying declaration might be admissible under certain circumstances, the rule was not applicable in the present case. It was argued that the subject-matter of the inquiry was not principally the death of the deceased, but something collateral—that is, the declaration of the victim went to prove that the prisoner used instruments for the purpose of procuring abortion, and her death was not the subject of inquiry before the court.

The Lord Chief Baron Pollock confirmed the correctness of this argument. He ruled that the dying declaration of the woman was improperly admitted in evidence, and the conviction was quashed. The rule to which he adhered was that laid down by Chief Justice Abbott in Mead's case, where he said that "evidence of this description is only admissible where the death of the deceased is the subject of the charge, and the

circumstances of the death form the subject of the dying declaration."

The practical teaching of this case as regards our profession is, to take care, first, that the person making a "declaration" shall believe himself to be in a dying state; and, then, that the circumstances causing the death are the subject of the dying declaration. It remains for the lawyers, subsequently, to see that the death of the deceased is the subject of the charge upon which the declaration is tendered in evidence.—*Ibid.*

The Hunter Statue.—At the last meeting of the Committee for erecting a statue to the memory of our great physiologist, Mr. South reported that he had received a letter from Dr. Henry Bowditch, of Boston, U. S., from which we extract the following:

"I send by my excellent young friend, Dr. Parks, of this city, what I hope will prove only the first instalment of the American contribution to the Hunter memorial, viz., £45. Perhaps you may be aware that at the late meeting of the American Medical Association, a National Committee was appointed to collect for the Hunter Testimonial. The money I now send by this opportunity (although it will be a part, I trust, of a large fund) was collected in the 'Old Bay State,' without reference to the nation."

Mr. Weekes, the eminent sculptor, has already commenced his work, and from what we know of him, there is no doubt the subject in question will be one of his happiest efforts. *British Medical Journal.*

The New Species of Man.—M. Payle denies that the Niams-Niams, inhabitants of Souday, have any prolongation of the coccyx. They are, therefore, improperly called tailed men. These people attach an animal's tail to the place where a tail would be fixed; and this is all their clothing. This it is which had led travelers into mistakes on the matter.—*London Med. Times & Gazette.*

Rupture of the Varicose Veins in the Vagina during Labor—Death.—A stout woman, aged twenty-three, while in labor of her first child, was seized with very severe pain during the passage of the head, the presentation being quite normal. The perinæum was suddenly put on the stretch, and gave way in spite of the greatest care used by the accoucheur to prevent its rupture. Soon after the birth of the child, severe hemorrhage occurred; syncope and convulsions rapidly followed, and in about ten minutes the patient expired.—*Berliner Zeitung.*

CORRESPONDENCE.

PHYSICAL EXERCISE—INFLUENCE OVER THE PROGRESS, AND FINAL RESULTS OF HUMAN GESTATION, AS REGARDS MOTHER AND OFF-SPRING.

By J. P. Hall, M.D., Glasgow, Ky.

Scarcely any subject embraced within the whole range of medical investigation is invested with a higher degree of interest than Gestation, as regards such conditions as make for the present safety and future welfare of both mother and child. The subject being in itself of transcendent moment, involving the laws and conditions under which organic vital relations are primarily developed, we can not too diligently observe or profoundly study the tendency of physical habitude in modifying the progress and results of human pregnancy.

If there is any single agency more potent than every other in its influence to modify the tone of physical life, it is well-regulated, manual exercise. And it would scarcely seem necessary to urge upon the medical mind, already imbued with the teachings of experience, a consideration so obviously established as that healthful integrity can only be preserved, and vigorously preserved, by subjecting the whole organism, at well-regulated periods, to a proper degree of motive action. And when we reflect that the pregnant female has to maintain this integrity in behalf of her own organism, not alone for her own well-being, but that through its offices are to be evolved the component elements of another organism, not less complex than hers, and alike diversified in its requirements, we can not fail to realize the deep importance of maintaining in the highest possible degree of normal activity the functions of the female economy during the term of gestation. It is evident that whatever will conduce to the fullness of her own health and vital energies, will strengthen those forces upon whose vigorous exercise depend the perfection of a new being. It may be assumed, however, without argument, that the more perfect the health of the mother, during the period in which the embryo is being formed and ultimately matured, the more likely will she be to meet safely the trials of labor,

while it forms an almost fixed condition to the development of a vigorous, healthy offspring. To confirm the justness of these reflections, it is only necessary that the obstetrical inquirer should embrace within his practical studies the extreme and intermediate grades of civilization, making faithful parallels of the results of his analyses. Amid the subjects of roaming, savage life, too, where civil or social custom has not usurped nature's primeval laws, we find these principles sustained by a logic that is far superior to the mere assertions of science. Opportunities of instituting positive comparison are less frequently presented than one would imagine without reflection, yet generations will supply such materials for deduction as will very well answer all practical ends. For instance, an opportunity has been recently presented to me for making some striking observations, yet no means were allowed me of determining to what extent the events that really attended the particular case would have been modified had it been surrounded by an entirely different set of circumstances. Here all demonstration is foiled, still inquiry should not be arrested.

At 1 o'clock on Monday morning, I arrived at the quarters of a stout, healthy, young negro woman, 4½ miles from town, in labor with her first child. I learned that labor had been in progress about four hours, and also that she had laboriously followed the plow every working day during the preceding six weeks while the thermometer ranged from 88° to 94° Fahr. in the shade; and furthermore, that she had walked to town the previous day (Sunday), spent the day with a friend, returned at a late hour in the evening, reaching her quarters almost simultaneously with the setting up of labor pains. Two and a half hours from my arrival, she was delivered of a vigorous, well-formed child, having had an unusually satisfactory parturition. Within a fortnight after this event she was thought in a favorable condition to exchange the lying-in-chamber for the corn-field and plow, but of course this was not permitted. Not a single evil circumstance has beset the health and growth of the child in its subsequent progress.

I will relate the events attending another acouchment, which happened when Kentucky had but a compendious medical record: When my grandfather, on the father's side, was

almost the sole resident of this neighborhood, and when Indian depredations were of almost daily occurrence, he was unexpectedly called from his home, at an early hour in the morning, in pursuit of Indians that had escaped with his last two horses. This happened in what was called the *cropping* season when he could but illy dispense with the services of his horses. He left at home a wife and three small children, the elder about six years old. In the first part of the night of the day of his departure, the wife was seized with active labor-pains, without other company than her little ones nearer than four or five miles. Labor was speedily and safely terminated, the placenta promptly expelled, when she proceeded, with scissors and ligature, to adjust the funis, and bestow upon her new-born such other attentions as were needful. Necessity left her no alternative but to pursue her domestic avocations without interruption. Upon the husband's return, with his recaptured horses, after an absence of three days (she having seen no human being, save the children, in the interim), he found every thing the very blossom of satisfaction. From the peculiar circumstances of these early times, every housewife was inured to the most trying scenes, and the routine of domestic duties which had to be performed, without other help, necessitated habits of great activity. Although the cases to which these brief narratives relate are not to be commended as examples of the most judicious regimen, they yet serve very well to establish the position that pregnant females may be subjected to what would seem most violent usage without prejudice either to themselves or offspring.

The accomplished *Accoucheur* to the Princess Eugenia, feeling that distrust naturally incident to the responsibility of officiating on such an occasion, suggested to her monarch the propriety of professional counsel, when Napoleon replied: "Treat the case of the Empress just as you would the wife of a baker under like circumstances, and I shall rest satisfied that her labor will terminate favorably." While the probabilities of a safe result were doubtless in favor of the baker's wife, it was only so on account of a dissimilarity of physical habitude. We might reasonably conclude that the habits of Her Majesty would have been those of luxurious ease and sedentary discipline, while the baker's wife lived by the action of her muscles

and the sweat of her brow. That habits of refinement and luxury, and fashionable customs generally are in conflict with the laws of health, is a proposition not likely to be controverted by any physician entitled to be ranked among the health-conservators of his race. If this is admitted, the converse proposition, that habits of activity and simplicity of custom conduce to the legitimate offices of health, inevitably follows. And in pursuance of this style of reasoning, I may with great propriety urge the claims of the pregnant female, in view of the complex functions of her economy, to the benefit of the best promoters of health, that the science of hygiene is capable of promulgating. Like every other consideration which attaches to a well-devised system of hygiene, exercise must be employed with wise discrimination to secure its uniform benefits. So earnestly am I impressed with the interest of this subject, that I should regard it a most appropriate topic for the deliberations of your Medical Society. I should be deeply gratified to see the interesting results that would be eliminated from such a question, discussed with the mature learning and diversified experience that characterize the membership of your club.

Let it not be supposed that I attach a too light value to the host of other regulations which contribute to maintain the harmony of the constitution and thereby strengthen the functions of health, it comports with my present aim to discuss the claims of this one regulation separately. I may not, however, conceal the opinion to which I hold, that the harmony of the circulation, respiration, nutrition, inervation, etc., depends in a greater rate upon this observance than any other separate observance appertaining to the best methods of modern hygiene. Not unlike the machinery of human mechanism, the animal organism must be constantly exercised to be maintained in efficient working condition. Life force is most efficiently exerted under its appropriate stimulus; and if I am not deceived, the application of this consists, to some extent, in a judicious exercise, gymnastically, of those material structures in which such principle resides.

Science may succeed in rendering amply plain the claims of any given principle for the government of life, but to secure its practical observance by the community is quite a separate

affair. And it is a grievous truth, too, as we ascend the scale of social position, where the relations of health to civil custom are best understood and appreciated, do we see the claims of gymnastic discipline ignored as belonging alone to rude and vulgar existence. As a question of option, human nature revolts at discipline, and the more so, especially, when it involves a sacrifice of those cherished conceptions of elegant refinement and polished indolence, to which so considerable a portion of our race are the voluntary slaves. A methodical and faithful compliance with the full requirements of health, as regards bodily exercise, alone demands real energy; and when not esteemed strictly compatible with polite breeding the observance will become extremely irksome. Yet why should the most learned and influential profession in the world not enact such customs and laws as the sacred interests of humanity demand, and exact compliance with them wherever its advisatory offices extend?

Tetanus—Whisky Treatment—Recovery. *By* Archie B. Cook, A.M., M.D., *Demonstrator of Anatomy, University of Louisville.*

Having perused with interest the reports of various cases of recovery from Tetanus under a variety of modes of treatment, and considered the present unsettled opinions of the profession as to the proper and most reliable therapeutic remedies, I publish the following case, with the hope that others may give the Whisky Treatment a fair trial:

The patient, a strong, robust Irishman, aged 28, weight 190 pounds, was admitted into the Louisville Marine Hospital August 3, 1859. In the early part of the spring he had been treated in the hospital for a chronic ulcer, about midway on the anterior tibial region of the left leg, and was discharged, cured, about the 1st of May.

When interrogated as to the cause of his present indisposition, I learned he had, three days previous, been exposed during inclement weather—had rode into the river, after which he felt chilled, and supposed he had a severe catarrh. The ulcer reopened, spread rapidly, and when admitted was irritable, inflamed, very painful, and measured about three

inches in diameter, the redness and tumefaction extending a considerable distance around the circumference of the sore. He complained of soreness of the joints, slight cough, and an uneasy sensation about the angle of the inferior maxilla when the mouth was widely opened. I applied the solid nitrate of silver to the ulcer, and followed it with a large flaxseed cataplasm, and ordered Dov. Pulv. grs. xv. at bed time.

August 5th—The condition of the ulcer being much improved, the poultice was omitted, and adhesive straps and bandage applied. He now had partial trismus, the foreboding of what was soon to follow. Previous experience having shaken my confidence in the ordinary and accredited modes of treatment, I ordered strict rest and quiet, and the Dover's powder to be repeated as in the two previous nights.

August 6th—The symptoms were more general. He now had intermittent spasms of the masseter and dorsal muscles, and slight general spasms when touched or excited. I ordered extract Cannabis Ind. ʒss. dissolved in ʒiiss. of cinnamon water, one teaspoonful to be given every hour.

August 7th, 9 A. M.—The Cannabis Ind. had all been taken five hours previous to my visit, and without the slightest benefit. He was now unable to open his mouth, and had frequent recurring general spasms. The extract of hemp was suspended, and whisky, two ounces every two hours, to be taken through a quill, and essence of beef, *ad libitum*, ordered.

August 8th—Found him more comfortable; the spasms were less severe and occurred at longer intervals. The whisky was ordered to be continued as on yesterday, ʒij. every two hours, and the beef essence at intervals of from four to five hours. Each day there was manifest improvement. The spasms, which at first were very severe, became less urgent, and he was able to get short naps of sleep during the night.

August 13th, 9 A. M.—Found him comfortable; was cheerful; had no spasms during the night. Observing he now had more symptoms of inebriation than tetanus, I ordered one ounce of whisky every three hours.

August 14th, 9 A. M.—I was informed by the attendants that the spasms had returned about twelve hours after he commenced to take the whisky in diminished doses, and had steadily increased in severity, until, at the time of my visit,

they were as rigid and violent as I have ever witnessed in any case. I ordered ʒiij. whisky, to be taken, through a quill, every hour, until he was again brought under its influence. The spasms relaxed after the administration of ʒxxiv. Three ounces were then given every two hours.

August 16th—He is improving. Ordered whisky ʒij. every two hours.

August 17th—Better. Whisky ʒiss. every two hours.

August 18th—Improvement continued. Whisky ʒi. every two hours. Same dose continued until 21st, when he appeared so much better that one ounce whisky was ordered every three hours.

August 22nd—The spasms returned during the night, and are severe this morning. Ordered whisky ʒiij. every hour, which was continued until 9 A. M., when he had four hours sound sleep.

August 23rd—Is better. Whisky ʒiij. every two hours.

August 24th—Better. Whisky ʒij. every two hours.

August 25th to 28th—The whisky was given in ʒij. doses every three hours during the day.

August 29th to Sept. 8th—Whisky ʒij. were given four times a day, and quinine sulph. grs. vi. during the day.

By the 10th of September, he was relieved of all symptoms of tetanus, the ulcer had almost healed, and he then commenced to act as assistant nurse in the ward. For the first few days his bowels were constipated; but I avoided cathartics of every description, and found that as soon as his system was brought under the influence of the whisky the bowels acted regularly throughout the treatment of the case. I ignored cathartics from the fact that, in former cases in which I had seen them administered, they only added to the general excitement of the system, and appeared to increase instead of diminish the severity of the spasms. Such a result might be anticipated from the nature of the disease. At first local, it is transmitted to the nervous centers, and from the great center radiates to all parts of the nervous system, the effects of which are observed in the two most prominent symptoms of the disease, muscular spasm and increased sensibility. While the superficies of the body present these prominent features, we infer that, from the direct connection between the functions

of organic life and the cerebro-spinal system, the alimentary canal is subject to similar influences, and that, as a blast of air, a touch, an effort at deglutition will produce spasms, so will any irritant, brought in contact with the mucous membrane of the intestine, result in aggravating the disease. In this case, which was as severe as any I had ever witnessed, I adopted the whisky treatment after the failure of the accredited treatment in three previous cases.

1. A boy aged 14; tetanus came on the 14th day after a nail had pierced the plantar surface of his foot, between the first and second metatarsal bones. Cathartics, including castor oil, opiates, ice to the spine and nape of the neck, and chloroform by inhalation, were given without any beneficial effect. The chloroform relaxed the spasms temporarily, but only added to the exhaustion and debility produced by the disease.

2. A man, aged 65, had tetanus the eighth day after wound of the foot, from treading on a nail, which penetrated the foot opposite the second metatasal bone. Cannabis Indica and Tr. Opii were given in full doses. He died on the eighth day.

3. A robust, healthy man, aged 21, fell from a horse, causing compound fracture of the leg. Tetanus came on the tenth day. All the usual remedies, including chloroform and camphor were administered, but all without effect. He died the fifth day after symptoms of tetanus were first developed.

From the evident good effects of the whisky in this case, I would administer it with more hope of success than any other remedy with the result of which I am at present acquainted. Should another case full under my observation, I would administer the remedy in larger doses and at shorter intervals until the spasms were controlled, after which I would direct it to be given in such quantities as to keep the patient constantly under its influence.

River View, Ky., August 16, 1860.

Mr. Editor: Permit me to give you a brief account of a formidable disease which has made its appearance in this neighborhood, with a degree of violence that has filled our inhabitants with the greatest alarm. Three cases of marked and unequivocal Diphtheria have occurred among us, within

the last twenty-five days, two of which recovered and the other terminated fatally. The treatment of this disease requires great promptness and energy. I will not attempt to give its causes, as I never like to mount upon the wings of conjecture; but will simply give the phenomena, effects and treatment.

CASE I.

On the 11th ult., I was called to a daughter of T. R. P——, who had been complaining several days. I examined her throat, and found the tonsils swollen and tongue highly charged with a brown fur. She is about seven years of age; had morning intermissions, and evening exacerbations. I administered a free emetic of ipecac; and finding that the bowels were rather constipated, I ordered calomel grs. iv., to be assisted by oil and turpentine, four hours thereafter. I also directed a gargle of salt, vinegar and water, to be used every six hours after the action of the cathartic, and left about grs. xii. quinine, to be given during the intermission.

On the following day, July 14th, I was again called in the evening, and was informed by her mother that she was suddenly and violently taken worse about noon. On a careful examination of her throat, I found the following prominent symptoms to exist: Tonsils much swollen, and apparently covered with a quantity of grayish, viscous mucus; a portion of the uvula enveloped by a false membrane; breath very offensive; pulse weak, but rapid; tongue red, and slightly swollen; respiration very much hurried; thirst insatiable, and constant calling for water. I employed a strong solution of nitrate of silver, for the purpose of cutting it short. I used twenty grains to the ounce of water, passing the probang every six hours beyond the tonsils. I concluded that this treatment might arrest the spread of the false membrane. By some the nitrate of silver is prescribed with diffidence, and denounced by others, while by a third (and I would hope the most numerous class) it is esteemed a most appropriate and valuable remedy in this formidable disease. This is undoubtedly a local, as well as constitutional, disease. In addition to the solution, I left the following supporting means: Quinine grs ij., carb. ammonia gr. i., every two hours; tinct. iron 15 drops, every five hours; and brandy at longer or shorter intervals, and in quantities according to circumstances.

July 15th—Symptoms better, system nicely and accurately balanced, pulse soft, and skin acting. The uvula and tonsils now present a glossy, and somewhat purple redness. Same treatment continued.

July 16th—Little patient still improving; discontinued quinine and ammonia, and substituted guiacum.

July 17th—Discharged, with a request that the brandy, muriated tinct. of iron, and guiacum be continued for several days, though in diminished quantities, and that the solution be discontinued.

CASE II.

July 29th, I was called, in consultation with Dr. Morrison, to a little sister of the one just mentioned, aged three and a half years. Her countenance was pale and sunken; there was a peculiar huskiness of the voice; and the pulse beat from 115 to 120. By giving brandy and quinine, the pulse was found, on the succeeding day, reduced to 100, and there was some apparent amendment. We also made effort upon effort to treat her with the caustic, but in vain. She used the most active opposition to medication. Nothing that affectionate solicitude could procure was withheld, and though it indeed seemed cruel to force open the mouth, and compel her to take tonics and stimulants when her constant cry was water, yet it became our painful duty to restrain her in the gratification of her desire, and force upon her supporting means, even after the curable condition was very limited, and the prognosis was very unfavorable. She lingered a few days, and then expired. About 28 hours before death, the voice was changed into a hoarse whisper, and the air seemed to enter impressedly as if it were forced through a very narrow aperture, and was attended with a dull, hollow sound.

CASE III.

On Sunday, August 5th, I was asked to visit a negro girl, at the same house, 17 years of age. The following are the most prominent symptoms: Her breathing was laborious, inspirations rather short and apparently arrested suddenly at a certain stage; pulse very weak; breath exceedingly unpleasant; her voice had a low moan; her tongue was swollen and of an ash color; uvula elongated; tonsils much swollen, almost in

contact, and some fluid and blood flowing from the right nostril. Prescribed Hyd. cum. creta., to be followed in four hours with oil and turpentine, four hours after the oil and turpentine quinine grs.iv. and carb. ammonia grs.ij. every two hours, chlorate of potassa grs. iv. every five hours, muriated tincture of iron 15 drops every seven hours, a solution of nitrate of silver, 30 grains to the ounce of water, every six hours, passing the probang beyond the tonsils, and the free use of brandy.

August 6th—General condition somewhat improved; I find, however, great prostration, indicating a continuation of supporting means. The inner surface of the left cheek, this morning, presents a pale pink color.

August 7th—Rested well last night; the mind for the first time is active and capable of making an effort at reason or investigation.

August 8th—Some appearance of exudation between the veil of the palate and base of right tonsil; the pale pink color now extends over the inner surface of the cheek, and also over the surface of the lower lip. Same treatment continued.

August 9th—No appearance of false membrane; tonsils, uvula, etc., present a natural color. Same treatment continued.

August 11th—Convalescence established. Advised brandy and iron to be continued for several days. I am induced to regard this as a disease of prostration. Tonics and stimulants, in my judgment, are decidedly indicated from the very onset, as they seem to act admirably. All days when cathartics were not given, the bowels were moved without.

Respecting the propagation of Diphtheria by contagion, I will simply remark, that all fear should be dispelled, and not the most remote idea of this kind be entertained by any man of generous impulses or intelligence. I will here state that in using the probang there was no pain produced, as in common imflammations of the throat, and though there was swelling about the neck, there seemed to be no difficulty in swallowing.

If these few thoughts can be of any service to your readers, I am rewarded, and respectfully submit them.

I remain yours, truly,

H. G. DUERSON.

Mr. Editor: A singular case has occured in my practice. It is that of a negro boy belonging to one of my neighbors. In August, 1856, he was coon hunting at night, laid down on the wet ground and fell asleep, and on awakening next morning could not speak above a whisper. He remained in that condition until the fall of 1857, when his owners put him under my care. I did all I could for him, but still he was no better, so far as speaking was concerned, though his general health was very much improved. He continued to enjoy very good health until some time in the early part of last winter, when it began to fail, and by the middle of December he was so weak that he could scarcely walk. He complained of pains in his back and chest. He was advised by some person (not known to me) to take about an ounce of Sampson snake root, put it into a pint of whisky, and take two good drinks daily. This he did, but not being satisfied at simply following the directions, he commenced chewing the root instead of tobacco. So after taking his drinks and chewing the root for seven or eight days, he began to improve, and by the time he had taken it twenty days, he could speak as well as he ever did, to the astonishment of himself and every body else that knew him. He tells me that, "after chewing the root for a week or so, that every time he took a chew, it produced a stinging, burning sensation away far back in his mouth," to use his own language. I have stated the case to you just as it is, and I want you to write to me whether you think it is possible that Sampson snake root has any such properties as those indicated or not. It has been used here by the old ladies as a very powerful emenagogue. They say it is the best known to them.

E. H. L.

Scarboro', Ga.

So many organs and structures take part in the production of the voice, that aphony or dysphony may own an infinity of causes. Our friend may remember a case of almost complete aphonia which was under our care in Savannah, Ga., during his pupilage, in which recovery followed the use of counter-irritants at the nape of the neck. In this case, the spinal nerve was at fault; but in the one reported, we doubt not that the snake root was effectual for good. But just such cases

breed empirical remedies; and in the next score which may fall under his observation, the snake root might be either injurious or inert. Remember that both of the affections spoken of are merely symptoms, or indices, pointing you, it may be, to distant organs, or morbid actions, which influence the vocal apparatus, or perhaps to pathological conditions of this apparatus itself.

It is not necessary, in this connection, to do more than hint at the influence of fevers, aortic aneurisms, spinal or cerebral lesions, convulsions, fear, anger, sudden joy, prolapsus uteri, uterine polypi, pregnancy, orchitis, syphilis, affections of the stomach, lungs, bronchi, trachea, larynx, pharynx, œsophagus, fauces, tonsils, tongue, veil of palate, uvula, hard palate, nares, etc. How idle it would be, then, to assume that any article as such, is useful in aphony as such; but how readily we may understand the power of local stimulants to parts in a state of atony, as was doubtless the condition in the case reported. EDITOR.

DIPHTHERITIS.

By C. A. HARTMANN, M.D., Cleveland, Ohio.

The disease now generally designated by this name has been brought forward as a new affection, and largely discussed during the last two years, especially in France, England, and America. It appears to have been frequently confounded with croup, gangrenous and scarlatinous angina, and other affections of the throat; even Bretonneau, who principally initiated, in 1821, the recent consideration of the disease, did not distinguish it clearly, giving it the names *diphtherite*, *croup*, *angine maligne*, *angine gangreneuse*, promiscuously. According to him, it is the same with the *Egyptian disease* of the Greeks. Dr. Baird had previously in this country recorded the particulars of an epidemic that occurred in New York, in 1771. He described it under the name of *suffocative angine*. Other older names applied to it are *cynanche maligna*, *scarlatina anginosa* (in America often used up to the present day), *morbus strangulatorius* (Dr. Starr, 1748), *Fothergill sore throat*, *throat distemper*, *malignant sore throat*, *malignant angina*, *membranous angina*, etc.

Hippocrates seems to have been acquainted with it, and a very good description is given by Aretæus. Since then there is no record pointing to diphtheritis until the days of Cullen,

Huxham, Fothergill, Star, and others, in the second half of the last century; and although they described it as a "new and separate disorder," it fell again into neglect, until more recently the notices of Baird and Bretonneau were followed by a very extensive epidemic appearance of the disease, it spreading, between the years 1818–57, over France, since 1857 over England, and since 1845 over this continent.

Besides the general name, *diphtheritis*, *diphtherite*, *diphtheria* (meaning an exudation in patches), a large number of designations are found in the works of recent writers. It is the *angina diphthcritica maligna* of Trousseau; *angina couenneuse* of Duche, Bouchut, and other French authors; commonly called *diphtherie*, in French; the *plastic pharyngitis* of Porry; the *membranous disease*, commonly called *membranous croup*, of Cotting; the *hog-skin angina* of Palmer; *diphtheric*, *membranous*, *pseudo-membranous*, *putrid*, *malignant*, and *epidemic sore-throat*, *scarlatina*, or *epidemic angina*, *malignant cynanche*, of other American physicians. Some call it simply *sore-throat*.

Diphtheritis proper is an eminently fatal, mostly epidemic, but not unfrequently sporadic disease, of a very peculiar character, appearing with a great variety of symptoms, but presenting, as general features, a marked prostration of the nervous system, and the formation of a pseudo-membranous exudation, which always commences with patches upon a congested surface, and manifests a particular propensity to attack the mucous membrane of the fauces, spreading downwards and upwards; it is, however, occasionally seen upon other mucous membranes, and even upon the skin. Children suffer particularly, but young persons and adults are not exempted from attacks of the disease.

The symptoms, not only at different times and in different locations, but during the same epidemic and in the same place, are so variable that it is difficult to give a description of them of any general applicability. "In not two cases," says one author, "is there a perfect resemblance, either in the grouping of the symptoms, in their order of succession, or in the degree of their individual symptoms." Some cases commence with fever; in others there is none, or it only appears after some time; there may be a diminished secretion of urine, or not; albuminuria is often present, but frequently wanting; so it is with headache, difficult respiration, diarrhea. Some of the more constant symptoms are general malaise, impaired deglutition, and a very weak, accelerated pulse. One fact seems to be pretty well established: The statements of Trousseau and others show that the disease since 1846 assumed a more violent and malignant character, entirely different from what it was in the time of Bretonneau.

The last named physician gave the following description: The disease usually commences in one tonsil, seldom in both; slight fever; white spots on the affected tonsil; enlarging of the cervical glands. Redness surrounds the concretion, and it spreads rapidly to the velum palati, uvula, the other tonsil, and the pharynx. The swelling of the lymphatics either subsides or remains stationary. After some hours or days a ringing cough, dry, or accompanied by a frothy expectoration, announces the extension of the disease to the respiratory organs. There are now irregularly-shaped patches of redness, without swelling, coated with a concrete exudation. One or more long, narrow, red streaks extend to the pharynx or trachea; a stripe of concrete matter is seen on the center of each of these streaks, and small, semi-transparent vesicles often appear in the substance of these incipient concretions. The edges of the pellicle are gradually lost in the surrounding mucus, which is no longer viscid, but coagulated near the concretion. The latter can be easily detached; it is, however, in such case speedily reproduced, being now firmly adherent, often several lines thick, and changing its color from a yellowish-white to yellow, gray, and finally to black. The subjacent surface is usually of a slightly red tint, more vivid at the periphery of the patches, and sown all over with points of a deeper red color, through which points the blood readily transudes. Now the alteration of the organic surfaces becomes more maifest; often concrete matter is deposited into the very substance of the mucous membrane; there is a slight erasion, and sometimes echymoses, in points exposed to friction, or from which the avulsion of the concretions has been attempted. The corrupted exudation exhales an infectious odor. If circumscribed, they appear depressed, from the œdematous swelling of the surrounding cellular tissue; if they are, on the contrary, extended over considerable surface, they become partially detached, and hang down in shreds more or less putrefied, simulating the last stage of sphacelus.

Dr. David Wooster, of San Francisco, remarks on this (*Pacific Med. and Surg. Journ.*, May, 1859), that "no vesicles have ever been observed in the forming concretion on this continent; that here at the incipient state the false membrane adheres most tenaciously, and is not easily detached; that the edges of it shade off so insensibly into the natural aspect of the neighborhood as to render a rigorous definition of its limits impossible; that the center of the patch is whitish or grayish, and opaque, while its periphery becomes more and more translucent; further, that the affected parts never bleed, except when violence is used to tear or scrape off the false membrane, and then the bleeding stops with remarkable

promptitude, and does not occur again, except on the repetition of the violence." Wooster states, also, that "our false membrane never becomes black; indeed, it is paler after than before death."

According to Dr. W. G. Dyas (*Chic. Med. Journ.*, Oct., 1859, to March, 1860), there are at least four distinct forms under which the disease may appear:

1. "It may destroy life in a few hours, by a violent and deep impression on the nervous centers, attended by congestion of the internal organs; in this form we may not be able to witness the pseudo-membranous exudation, supposed to be pathognomic of it." There may be, corresponding to occasional violent cases of scarlet fever, "a deadly pallor of the surface, a dusky hue of the countenance, and particularly of the lips, a soft, irregular pulse, tongue moist and livid, pupils dilated, drowsiness, urine limpid, often suppressed; no complaint of local pain, and an air of indifference when roused from stupor. In such cases death will take place within four hours. This form of diphtheria is rare."

2. Another form, scarcely less malignant, is more frequently met with. "The subject of it, generally a child, perhaps retires to rest apparently in its usual health. In the middle of the night, or rather towards morning, it awakes with a sense of distressing nausea, followed by vomiting of a thin, whitish, glairy fluid. Then there is a purging of something similar, but particularly offensive. The child most probably does not complain of uneasiness in the throat; he is drowsy, and seems disinclined to answer questions. The face is pallid, and the expression altered. On examination, we are struck with a shining crimson appearance of the mucous membrane of the fauces. From the velum a tenacious, thin sheet of translucent mucus hangs like a curtain over the base of the tongue, the papillæ of which are tumified, its surface dry, clean and red. The pulse is rapid, irregular and compressible. The skin may be warm, though more generally it will be found cool. After a lapse of some hours reaction takes place; and now there is a difficulty of deglutition. Drowsiness is succeeded by delirium; respiration is more frequent. The neck is swollen, hard and tender, chiefly in the parotid and sub-maxillary regions. The anterior half of the tongue may be clean, but posteriorly it is coated with a thick fur, which sometimes is continued to its tip. The whole of the fauces is covered with a deposit like wash-leather. One or both tonsils swelled; breath offensive; a thin sanies issuing from the nares. There may be epistaxis and bleeding from the gums. At first, the urine is limpid; but should the attack not terminate in death within twenty-four hours, it becomes more colored, and there

will be a deposit of lithates; at a later stage it is albuminous, and contains the coloring matter of the blood; petechial spots form on the surface, diarrhea sets in, or if it has been persistent from the beginning, the discharges become altered in appearance, being like what we occasionally see towards the close of dysenteric cases: serous, liike the washings of flesh, and accompanied by intolerable fœtor. The surface grows cold, and either coma or a tetanic convulsion terminates life, generally within four days. Few cases of this kind escape; and fortunately it is not the usual type of diphtheria, even when malignant."

3. "The malignant form most familiar with practitioners commences with a sense of lassitude preceding a variable amount of fever and slight soreness of throat. The pulse becomes rapid, small and compressible; the tongue is covered with a thick, yellowish, dirty-brown coat; the uvula, velum, and pharynx are at first of a dusky red; deglutition is painful and difficult; the neck, about the parotid and sub-maxillary regions, swells; from the nose distils an acrid humor; the voice changes; the breath grows fetid; the breathing, from mechanical obstruction, is stertorous; there is much thirst, and there may be vomiting. In some hours the erysipelatous hue of the fauces is replaced by a deposition, as if, as Dr. Blount expressed it, a thin layer of pie-paste was spread over the parts, the edges being thick and abrupt. The urine is scanty and albuminous; debility increases, and the patient sinks exhausted, often retaining to the last the intellect in its integrity. This is the most frequent mode of accession, progress, and termination of malignant diphtheria, and its duration is generally from eight to ten weeks."

4. "The next variety of the disease is what has been termed croupal. In some epidemics, this has been the prevailing type. It does not appear to be attended with the same oppression of the system of those already described. A sense of constriction in the larynx is an early symptom; the accompanying fever is generally sthenic in character, though some such cases have not presented, from beginning to end, pyrexia. The false membrane rapidly extends to the respiratory organs; there is a hoarse, barking cough, with occasional paroxysms of suffocation, and death takes place by asphyxia."

5. "The form most frequently appearing in this country is of a more gradual invasion, and commences with symptoms of catarrh; coryza, slight fever, with headache, and a pain in one or both ears, usually usher in the attack. There is some soreness of the throat, without swelling either of the fauces or the glands externally. The appetite is often scarcely lessened. There may be diminished energy, but not so much as

to prevent the patient from attending to his usual pursuits. The fauces, on examination, will present one or more insulated patches of a grayish-white pseudo-membrane, not so defined at the edges, nor bordered with the same distinct redness as in the malignant variety, but more shaded off. In this form, which lasts from five to ten days, there may be some albuminuria; and even after the more prominent signs of the disease shall have passed away, albuminuria may for a variable length of time be persistent, and accompanied by an anæmic state of the system."

Dr. John H. Hollister, of Chicago, attributes (*Chicago Med. Exam.*, March, 1860,) the various modifications of the disease to the different physical conditions of those suffering from it. The sthenic form, for instance, presents inflammation of the most decided sthenic character, with remarkably plastic effusion, resulting in the formation of firm and thick false membrane. In one case, this pseudo-plasma was found so perfectly developed as to give, after expulsion, a perfect cast of the trachea and bronchial tubes to a great extent. An asthenic case, on the contrary, may be marked by nothing but a croupy cough, continuing, without any other disturbance, for a number of days. The fauces will be found affected by congestion of a passive character, the tonsils much enlarged, and the whole of the mucous membrane in the posterior part of the mouth of a dark, livid color. Slight secretion of mucus; labored respiration. Soon the affected parts change in appearance, become covered with an abundant sanious discharge, asphyxia develops itself, and the patient sinks in a few days.

Prof. Alonzo Clark, in his lecture on diphtherite, before the College of Physicians and Surgeons, of New York, (*Med. and Surg. Reporter*,) divided "all the modes of invasion peculiar to this affection" under two heads: those in which the *constitutional symptoms* are active from the beginning, and those in which the disease makes its invasion *very insidiously*, and only becomes manifest by the appearance of a patch of exudation upon one or other of the tonsils, or in the fauces. "In this latter class of cases, the children do not complain of much ill-health; yet it is apparent that they do not feel exactly well, and have, as a rule, not much disposition to play;" they may, however, be found in bed amusing themselves with their playthings. Voice full, perhaps a little hoarse; some coughing; slight glandular swelling on the outside of the throat. A little patch of membranous exudation on the fauces, sometimes surrounded by a venous injection. Pulse not very rapid, perhaps 100; countenance only a little paler than usual; tongue not particularly covered with any coating, nor dry. In such cases a few cold chills may form the first indication of

the disease; the constitutional form commences almost invariably with cold chills; there is high fever, and sometimes vomiting, at the very onset.

"The symptoms of membranous disease," says Dr. B. E. Cotting, of Roxbury, (*Boston Med. and Surg. Journ.*, Sept. 22, 1859,) are both constitutional and local. The constitutional may be so severe and so rapidly developed as to destroy life before the local have become a source of danger, or they may be so slight as to be overlooked. The local, also, may have the violence, though not the other characteristics of rapid inflammations, or their existence may even be a matter of doubt, until made evident by obstruction, caused by the membrane fully formed. It is a self-limited disease, having its beginning, middle, and ending, as marked and uniform in progress, and as uncontrolled by any means now known, as variola, measles, or any other disease that can be cited. The formation of the membrane (as constant a condition as the eruption in variola) does not always correspond in amount to the severity of the other symptoms, general or local, in this also resembling the diseases alluded to. The membrane may be only a thin film, or it may have the thickness and toughness of moistened parchment; it may cover only a very limited space, or it may occupy the whole mucous surface of the organs attacked. It usually forms gradually, being at first a very thin layer (not unlike the first coat of white paint on a pine board); then this layer becomes thicker and tougher, day by day, until it reaches its limit. Its progress, so far as it has any, is from above downward; and any deviation from this rule is rather apparent than real. From the outset, however, it generally covers all the surface that it ever will during the attack, increasing only in density. Its thinness may prevent its being early noticed on parts within sight, though clearly visible at a later period of the disease. During its formative stage it remains firmly adherent to the mucous tissue beneath it, so that it is impossible to remove it, even by the most careful dissection. As soon as this stage is completed, usually in four or five days, the membrane begins to loosen from its foundation, and soon becomes entirely separated; it then creates sufficient irritation and cough to cause its expulsion. Sometimes it is cast off without observation, while at others its ejection is attended with convulsive efforts of the greatest severity. If a portion is artificially removed, previous to this natural separation, another forms in its place."

The false membrane exists in all cases of diphtheria, affirms Dr. Dyas (l. c.), except in those extremely rare ones wherein the system is at once overwhelmingly oppressed by the attack, and life is extinguished ere time is given for the usual charac-

teristic phenomena to be fully developed. It appears very early, within eight-and-thirty hours from the beginning of the disease, generally on one tonsil, or rather in the sulcus between the anterior pillar and tonsil, like a stain left by nitrate of silver on a mucous surface—a pearl-colored spot on a red ground. Sometimes it appears first on the uvula or velum. It extends more or less rapidly, so as often to cover the tonsils, uvula, velum, pharynx, pillars of the fauces, and base of the tongue, with a continuous layer, in from twenty-four to forty-eight hours. It may pass along the respiratory passages to the bronchial tubes, and even down to the œsophagus—according to some, as far as the cardiac orifice; it has been found following the nasal ducts to the conjunctiva. The mucous membrane of the cheeks and gums, the cutaneous surface, the vulva, and the anus may be its seat. Hence the terms faucial, pharyngeal, pharyngo-laryngeal, or croupal, laryngo-tracheal, buccal, vulval, cutaneous, pharyngo-cutaneous, laryngo-cutaneous diphtheritis. Several of these forms have happened in the same family nearly at the same time, showing that the distinction is immaterial.

Generally the thickness of the membrane increases with its area; this, however, varies from the thinnest imaginable pellicle to two or three lines. It may be firm, or a mere diffluent pulp. Sometimes it is in distinct, dull white patches; at others it is confluent. Occasionally it assumes a light buff, yellowish, ash-colored, or even black appearance.

Diphtheritis may run its course, from beginning to end, to recovery or death, without a single pyrectic symptom; when fever accompanies it, the type of it is not always the same, although the tendency is usually to the typhoid. In this country the attendant fever has been frequently of an intermittent character, probably in consequence of prevailing malarious influence; if so, the intermittent ought to be considered as a complication, rather than a modification of the original disease.

Among other complications observed are measles, scarlet fever, small-pox, whooping-cough, gastric fever, gastro-enteritis, meningitis, and the various diseases of the throat.

Dr. Daviot did not think pharyngeal diphtheritis contagious; and Dr. Cotting also asserts to have seen no evidence that the disease in general is contagious. The evidence so far collected, however, leaves no room to doubt the truth of the remark made in the London Lancet (April, 1859), that "contagion plays the principal part in the propagation of diphtheria." Diphtheritic matter, ejected from the mouth of a patient and lodging in the nostrils of the attending physician, has subjected the latter to severe diphtheritic inflammation, spread-

ing to the pharynx, and inducing extreme prostration of the whole system. Quite a number of similar cases are on record. A boy using a bath in which a diphtheritic patient had been previously, contracted the cutaneous form of the disease. If the morbid matter happens to come in contact with an abraded or wounded spot of the skin, the characteristic membrane will arise from that spot, inducing also the usual constitutional symptoms, and frequently the affection of the fauces.

There are still some other phases of this singular disease to be considered. Even if the patient has recovered from the immediate effects of the attack, and appears completely convalescent, he may, in several weeks, sink and die without any further well-developed symptoms. Latent pneumonia is frequently discovered in the dead body. Amaurosis, strabismus, and presbyopia have been observed as consequences of diphtheritis; but one of its most common sequelæ is paralysis, either partial or general. Two, three weeks, or a month after all traces of the original complaint have disappeared, symptoms of anæmia manifest themselves, and slowly paralytic affections are developed. The first is usually confined to the soft palate, or tongue, characterized by a difficulty of deglutition, and a nasal speech; but this may be wanting. If present, it gives way to more general nervous accidents, sometimes increasing to delirium and convulsions (which must not be confounded with the same symptoms attending the more malignant forms of the disease). But these constitute rather an exception: in most of the cases tending to paralysis, a sense of numbness follows, in one or both arms, the neck, or lower extremities. There may be also vague pains in the back and elsewhere. Now the strength fails gradually; walking becomes more and more painful, until the upright position is impossible. The upper extremities partake in this weakness, the head sinks on the chest, etc. According to Trousseau, the same alternations may be present as in purely nervous affections: the numbness changing from one hand to the other, or the paralysis attacking the legs alternately. In all cases there is an evident affection of the spinal system. Numbness of the cheeks and nose, or distortions of the face, defective articulation, strabismus, paralysis of the bladder and rectum sometimes supervene. There is no fever, a small pulse, but often a tumultuous action of the heart, with anæmic murmurs. The intellect remains intact, although the mental powers are depressed. Dr. Faure, of Paris, adds that during this paralytic affection sensation is diminished, and sometimes entirely lost, or replaced by formication. In some, sundry parts of the body become œdematous, in others gangrenous; others again are subjected to repeated faintings. If this condition terminates

favorably, recovery is very slow, occupying from two to eight months.

Dr. Cooper, of the San Francisco Medical Press, (Jan., 1860,) saw many of his patients die suddenly from pyæmia, after recovering sufficiently from attacks of diphtheritis to walk about. In these cases the pulse never arose to its normal standard, and the skin remained colder than natural.

The diagnosis of diphtheritis must be based principally upon the patch-like aplastic exudation, accompanied by marked prostration, and spreading, particularly downwards. Some authors also memtion a peculiar "muffled sound of respiration;" with Dr. Cotting this is the principal diagnostic sign. In his words, "It is very difficult to describe the sound. It can only be learned by attentive and frequent observations; yet it is more reliable, and therefore more valuable, than all other diagnostic signs. Once in a while it can be detected before any other indication of the disease is manifested—say in the first two or three hours." The absence of membrane within sight is not always sufficient evidence that the disease is not present. In such cases, the general condition of the patient, the frequent and feeble pulse, and the *genius epidemicus* must be our guides. It is then that the sound so much relied on by Cotting may also prove a valuable symptom.

It can not be difficult to distinguish diphtheritis and scarlet fever, or putrid sore-throat, as there is no eruption, nor ulceration and sloughing in our disease; or at least the latter but rarely. More important is the diagnosis between diphtheritis and croup; Bretonneau, Duche, Guernsant, Baird, Barthez, Rillet, Johnstone, and others defending their identity, and simply designating croup as laryngeal or tracheal diptheritis, or declaring both to be the same disease, only affecting different portions of the same mucous membrane. But diphtheritis is essentially an asthenic disease, affecting the whole system, thus producing a series of constitutional symptoms; it is epidemic and contagious, while croup lacks all these attributes, being only an inflammatory local affection. In croup there is never the swelling of the lymphatics of the neck, which is a constant attendant upon diphtheritis, and the pseudo-membrane itself sufficiently separates the two diseases: the origin from patches, the aplastic nature and its spreading far beyond the air-passages, which become affected merely by confluence, are found only in diphtheritis. Croup is, further, almost exclusively confined to children, whereas diphtheritis attacks indiscriminately children, adolescents, and adults. Croup is never followed by paralysis, and kills only in one way—by suffocation; diphtheritis may end in the same manner, but it also induces death by asthenia, and months after the disap-

pearance of all exudation, by its effects on the nervous system.

In regard to the prognosis, Dr. D. Wooster thinks the mild variety, or simple form of the disease (confined to the fauces), is easily controlled; but the severe form (combined with constitutional symptoms and extensive exudation), only with difficulty, giving an extremely unfavorable prognosis even at the beginning. The gravity of the prognosis in general may be said to be in proportion to the suddenness of invasion, and the signs of congestion. Good symptoms are: the false membranes ceasing to extend, and detaching themselves in shreds: slight febrile symptoms; absence of stupor; an unaffected pulse; a soft and moderately warm surface; expression not altered; unchanged color of face and lips; neck and papillæ of the tongue not swollen; no œdema of the fauces. In no disease, however, amendment is more fallacious: we can not, either from a particular sign or assemblage of symptoms, calculate with some approximation at certainty what the termination may be. The disease may have commenced without any indication of particular danger, may develop itself in an apparently mild form; and there may even be a manifest improvement in every symptom, the little sufferer perhaps sitting up, smiling, eating, drinking, amusing himself; suddenly croupy symptoms supervene, or reappear to end only with life. The disease has extended from the pharynx to the respiratory passages, and death is the result of asphyxia. This may also be produced without affection of the larynx, either by the swollen condition of the fauces, tonsils, and cervical glands, in combination with obstruction of the nares and altered innervation, or by a congested state of the lungs frequently accompanying the malignant forms.

Nausea and vomiting, or convulsions in the beginning of the disease, a rapid extension of the exudation to the posterior nares, a sense of constriction in the larynx, disagreeable odor of the breath, a croupy sound of the respiration, great enlargement of the cervical glands, are among the symptoms of fatal significance.

Life may be destroyed even after the whole membrane has been thrown off. The excessive and unremitting exertions in breathing, caused by the obstruction offered to free respiration, as well as the intense constitutional disturbance, are apt to exhaust the vital power, without suffocation. Complications generally tend to produce an equally fatal result. The superceding paralysis is frequently but not always removed by a proper treatment.

On the whole, the disease is, as Dr. Wooster says, one of the most decidedly fatal ones. The chance for a favorable recovery among children is about one in three, according to Dr. Cot-

ting; Dr. A. S. Clark thinks nine out of ten cases will recover, even with the malignant form, under an appropriate treatment. Admitting the influence of the curative means employed, there is still a formidable mortality unavoidably connected with the disease, though the number of deaths varies during different epidemics.

The post-mortem examinations usually reveal a deep red or livid appearance of the mucous membrane of the palate, pharynx and adjacent parts, more or less extensive. In most cases the palate, tonsils, upper part of pharynx, epiglottis, bronchial tubes, sometimes the internal surface of the œsophagus, the pituitary membrane, or some of these parts, perhaps the trachea alone, are found invested with false membrane. Seldom gangrene or ulceration is manifest. The lungs may exhibit patches of hepatization or purulent infiltration; and there may be more or less congestion elsewhere. Occasionally, blood is seen extravasated in the muscular tissue of the heart, and the kidneys often bear the marks of disease. The viscera are frequently dotted over with petechial spots.

Dr. A. Jacobi, of New York, declares the diphtheritic membrane homogenous in structure to the pseudo-plasma of croup; but this seems to be a mistake. The great difference between them is, that the diphtheritic exudation appears to be incapable of organization, and never tends to organic union with the subjacent tissues. Dr. Cotting describes it as of a peculiar structure: "a tissue of elastic fibres longitudinally arranged, the fibres smooth, and in no way transversely striated. Great elasticity is one of its characteristics."

Dr. Laycock found a parasitic fungus (oidium albicans) in this membrane, and supposed, therefore, that the disease originated from the parasite; but its presence is thought to be merely accidental.

The nature of diphtheritis is not entirely clear. It is now pretty generally admitted to be a constitutional affection, of an asthenic character, with prominent local manifestations, principally in the throat, resulting in the exudation of an inorganic pseudo-membrane. The disease is the result of a distinct influence (diphtheritic miasm), contaminating the blood, or infecting the whole system with morbid poison. The conjecture of Dr. Dyas, who considers a morbid impression on the par vagum as one of the principal features of diphtheritis, needs confirmation.

In accordance with this view, the therapeutical indications are the elimination or neutralization of the offensive matter, whatever it may be, the correction and mitigation of the local symptoms, and the support of the system, where necessary. Consequently, a general or constitutional and a local treatment is required, with strict dietetic measures.

Daviot, Meigs, and others, have practiced general and local bleeding, not without success; the general character of the disease, however, during the last years, and especially on this continent, has been such as to forbid blood-letting in any form; and it is at present looked upon as inadmissible. The croupal form predominating at the time of Bretonneau, seemed to offer an indication not now appearing. The same may be said of mercury, in spite of the many advocates calomel has found up to this day. Whenever the complaint extended to the larynx and trachea, Bretonneau placed his chief reliance on calomel, in three grain doses every hour, combined with mercurial frictions over the neck, arms and chest, repeated every three hours. The most extensive use of it is made by Dr. I. Meranda, of New Carlisle, Ohio, (Cin. Lancet and Obs., March, 1860.) To the strong, the robust, the plethoric patient, and in cases distinguished by high arterial excitement, he prescribes it with jalap in full purgative doses, following with the usual remedies against high febrile action. To those of a feeble constitution, or where marks of prostration are apparent, he gives calomel in alterative doses, conjoined with opium and ipecacuanha, or with camphorated Dover's powder, until there is an evacuation of green stools. When croupal symptoms supervene, calomel in small but often-repeated doses is Dr. Meranda's remedy; and in some chronic cases he maintains to have observed the happiest effects follow a moderate salivation. In a case detailed by Prof. Hollister (Chic. Med. Exam., Feb., 1860), powders of calomel and ipecacuanha play also a prominent part. Daviot, however, who wrote one of the best monographs on diphtheritis, looks on calomel as useless in pharyngeal, but particularly serviceable in the cutaneous variety. Dr. Briggs, of Virginia, and Dr. Anderson, of New York, admit it in small doses, two or three grains, the last named in combination with prepared chalk, in slight cases; while Dr. G. W. Claiborne (Virg. Med. Journ., Oct., 1859,) declares it to be a good remedy to commence the treatment with and prepare the organism for a tonic course, where "a foul tongue and offensive breath indicate disordered secretions of the primæ viæ." In the opinion of Prof. Alonzo Clark, "the application of dry calomel to the ulcerations of the throat is of decided benefit; but the administration of mercury, with a view of obtaining its constitutional effects, is a doubtful expedient." A similar practice of Dr. Bigelow will be mentioned hereafter. By far the most practitioners think rather unfavorably of mercurials in diphtheritis; and its inefficacy in many cases has been clearly proven. Even as an evacuant, the propriety of administering it in diphtheritis is at best questionable.

The recommendation of cathartics is very limited, Dr. A. S. Clark (*Ohio Med. and Surg. Journ.*, May, 1860), being almost the only one who insists on their use. In mild cases he orders a dose of sulphate of magnesia, or some other saline cathartic; but in cases of high fever, where "an active cathartic" is wanted, "that will stimulate the secretions, and at the same time not depress the vital powers," calomel is given, together with ipecacuanha, carbonate of ammonia, and soda, followed, if necessary, with Rochelle salts, or any other saline cathartics. The drastic cathartics are universally objected to. Dr. S. M. Bigelow, of Paris, in his excellent letter on diphtheritis addressed to Prof. Warren Stone, of Louisiana, (*New Orleans Med. and Surg. Journ.*, Jan., 1860), mentions the citrate of magnesia, six or eight drams, to be given every two hours until it operates. Equal, if not better, is the advice of Drs. D. Wooster, of California, (*Pacific Med. and Surg. Journ.*, 1859), and Wm. L. Wells, of Wisconsin, (*Chic. Med. Exam.*, April, 1860): to select either the mildest laxatives, or employ injections, so as to move the bowels once a day.

"I protest," writes Dr. Bigelow, "in the most serious manner, against the use of emetics in angine couenneuse," and they are certainly never plainly indicated. Nevertheless, they have been pronounced by some occasionally serviceable at the period of invasion of the disease, especially in young children, and when the false membrane extends to the trachea; others, on a more rational basis, will not admit them, except when their mechanical action might assist in detaching the membrane. In either case, neither antimony nor ipecacuanha should be used, on account of their depressing effects. (Wooster's plan, to commence with ipecacuanha in full doses and repeat them for two or three days, seems not to have been followed any where.) Drs. Meigs and Pollard used alum as an emetic, a teaspoonful mixed with molasses, repeating that dose in the course of ten or twenty minutes, if required. But the turpeth mineral (sub-sulphate of mercury), first recommended by Dr. Hubbard, of Maine, is now acknowledged as the best emetic in diphtheritis. It never induces catharsis, and is not followed by prostration, while it operates promptly and certainly. Two or three grains may be given to a child of two years every ten or fifteen minutes, until vomiting takes place. Both alum and turpeth mineral are well suited to patients above one year; for smaller children perhaps some preparation of squill would be preferable (Dr. Dyas).

The most prominent among the remedies employed as directly counteracting the morbid influence is the chlorate of potash, alone or combined with hydrochloric acid, iron and ether. Dr. Bigelow administers every three hours ten grains

of the chlorate and ten grains of the bichlorate, in some convenient vehicle, giving at the same time one-tenth of a grain of calomel with sugar, to be put dry upon the tongue, once in one or two hours, or less frequently, sometimes omitting the calomel altogether for a while, according to circumstances. Chlorate of potash with hydrochloric acid has been recommended by Dr. Kinsford (*Lancet*, Jan., 1859); Dr. I. Meranda prescribes two drams of the chlorate with one fluid dram of hydrochloric acid in eight fluid ounces of water, half an ounce to be taken every three hours. This formula was originally given by Dr. Lambden (*Lancet*, Nov., 1858); it contains free chlorine in solution. The chlorate and quinine in full doses constitute the treatment of Dr. Barker, of New York. Dr. Jacobi gives from a half to one dram per day to a child from six months to four years old, three drams to those above that age, continuing for weeks and even months. He usually adds iron, the muriatic tincture in preference. Finding in severe cases the chlorate to operate too slowly alone, he also combines it or precedes it with a few large doses of quinine. The best form, in his judgment, is the solution in water with the addition of some acid, generally the muriatic. Dr. A. S. Clark approves of the free use of chlorate of potash and sesquichloride of iron in tincture, diluted with nitrous ether, but he prefers the following formula: chlorate of potash, one ounce; syrup of lemons, water, of each four ounces; sulphate of morphine, two grains. Take a tablespoonful every four or five hours.

In Wisconsin, the tincture of the sesquichloride of iron, the hydrochloric acid and the chlorate of potash were given together in a convenient vehicle, or alternately in full doses. Sometimes the tincture of iron can not be borne for many days; then the sulphate of quinine with citrate of iron ought to be substituted (Dr. Wm. L. Wells). The "Lancet Commission" placed the most reliance in a mixture of sesquichloride of iron with chlorate of potash, chloric ether and hydrochloric acid, sweetened with syrup. The chlorate may also be given after the method of Dr. Gardner, of New York, in a syrup saturated with it, a teaspoonful in four hours, alternately with three drops of perchloride of iron in syrup. Nothing else is required in cases without local affection.

But notwithstanding this general adoption of the chlorate of potash, some doubts in regard to its efficacy have been expressed, especially by American practitioners. Prof. Alonzo Clark says it is not, as claimed, a specific in this disease, but still of some benefit, and should therefore form a part of our treatment. In the able article of Dr. Dyas occurs the following passage: "It is very much a matter of conjecture how

chlorate of potash acts on the human organism, and on the whole it is doubtful if it possesses a great deal of therapeutic value in diphtheria. It may be prescribed in combination with some bitter infusion (cascarilla, gentian, or bark), in doses of from ten to thirty grains, according to age." Most summarily Dr. Wooster disposes of it: he believes the chlorate of potash harmless, but of unproved efficacy, simply mitigating the fœtor of expiration.

The declining reputation of this remedy is apparently to be transferred to the muriate and sesquichloride of iron, heretofore only employed as adjuvants and tonics. In the latter quality, Dyas speaks of Thompson's bitter wine of iron, containing one grain of Wetherell's precipitated extract of bark and two grains of citrate of iron in a teaspoonful of cherry wine; but some prefer the tincture of the sesquichloride of iron, "ten or fifteen drops every third or fourth hour." Dr. F. Isnard warmly recommends (*Gaz. des Hop.; Amer. Med. Monthly*, March, 1860), the perchloride of iron as specific against croup and diphtheritis. It should be administered as soon as possible, in large doses, and continued at all stages of the disease. Dr. Th. Heckstall Smith, (*Braithwaite's Retrospect*, Jan., 1860), while relying chiefly on gallic acid, found the sesquichloride of iron tincture far superior to any thing; and Dr. W. H. Ranking (*Ranking's Abstract*, No. 29), confirms the value of this tincture as an internal remedy in diphtheritis. If so, the treatment of this disease would be materially simplified; in most of the present methods too many remedies are administered promiscuously.

In a monograph on scarlatina and diphtheria, (London, 1859), which he considers as one and the same thing, Dr. George Hull praises the sesqui-carbonate of ammonia as a specific, in doses from two to ten grains, every two, three or four hours. Baron treated before him (*Gaz. de Paris*, 5, 1856), diphtheritis with Vichy water and bicarbonate of soda.

A composition called "ferruginated cod-liver oil," has been proposed by Dr. Wooster, two fluid drams with one of brandy, to be taken four or five times a day, or oftener, if the stomach will bear it.

To meet the second indication a large number of topical applications have been employed, without due consideration of the question how far, if ever, it was practicable or necessary to remove the false membrane. Dr. Bigelow always removes, with a long forceps, or by scraping, or by any other means, violent or gentle, all accessible portions of it. Dr. Cotting, on the other hand, found that harsh attempts by emetics, probangs and the like, to dislodge the membrane before its natural separation, are often accompanied by fearful risks; and

could it be effected, it would involve a re-formation, more to be dreaded in the exhausted state of the patient than its first appearing. Dr. Wells also removes the membrane with the forceps, where it can be done, which is rarely the case.

Nitrate of silver in the solid stick, where practicable, or more commonly in strong solution, has been applied most extensively to the throat. Many are of the opinion it could not be superseded by any other local application; such an assertion, however, will not hold good everywhere. The application in substance is stated to have had occasionally the most serious consequences. Twenty, thirty, forty, sixty grains to an ounce of water have been employed, in the beginning as well as in the more advanced stages of the disease. Prof. Alonzo Clark and Dr. Jacobi, considering the application of the caustic to the membrane itself of no special service, only apply it to the parts immediately around the exudation, so as to prevent the inflammation from spreading, and limit thus the further extension of the membrane.

Bretonneau principally depended on the energetic application of concentrated muriatic acid. It has been employed by others, diluted or not, in very young children mixed with an equal quantity of honey. Equal parts of hydrochloric acid and tincture of myrrh, says Dr. Beardsley, detached the pseudo-membrane most readily, and diminished the liability of its being renewed.

A strong solution of sulphate of copper (one dram to one ounce of water) may also be applied topically. Used in the same manner, some preparations of iron have been found equally useful. The concentrated solution of the perchloride, or Monsell's salt in powder, or the tincture of the sesquichloride, are declared by Wooster, Wells, Beardsley, Dyas, A. S. Clark, and others, to be the most efficacious and valuable of all topical applications.

Dr. J. J. Morgan expresses a great predilection for a saturated solution of acetate of lead (adding one grain of morphine to the ounce), as a gargle, and to be applied with a sponge, two or three times in twenty-four hours. At least he commences with it in every instance, and if the disease advances in spite of it, he substitutes the lunar caustic in solution.

Tannin has not been tried sufficiently. Dr. Heighway, of Cincinnati, dissolved two drams of it in one pint of glycerine, and applied that solution by means of a probang, with good effect. Tannin may also be used alone.

Particularly destructive to the exudation is sulphurous acid (Dr. Heighway, Prof. Comegys); it is best used in the form of a salt, as the hypophosphide of soda.

Dulmont found (*Gaz. des Hop.*, 47, 1856), nitrate of silver and muriatic acid insufficient, but lemon-juice, painted over, a good application; Homotte added a little alum. Tincture of iodine has been tried about the same time, without giving satisfaction. Upon experiments made by him, Ozanam based, in the same year, the conclusion that all pseudo-membranous productions are best destroyed by the alkalies and muriatic acid, and soonest removed by bromine and bromide of potash. Thereupon he recommended this bromide or a bromine-water against diphtheritis, croup, and similar affections; but his proposition seems to have met with no favor.

An idea of Dr. A. S. Clark deserves a trial: he thinks glycerine may be employed, in advanced states, between the caustic applications, for its lubricating as well as for its solvent powers.

Strong nitric acid, applied by means of a brush, is the remedy of Prof. Comegys, when there are deep and extensive ulcerations.

Baudelocque used a decoction of bark with chloride of soda as a gargle; Wooster also mentions the solution of chloride of sodium, and Dr. Wells asserts that gargles with chloride of soda and chlorate of potash act undoubtedly as a solvent of the membrane. Dr. Roche (*Union Medicale*, No. 88; *N. Amer. Med. Chir. Rev.*, Nov., 1859), was very successful with injections containing chloride of sodium. He practices an almost continuous irrigation of the throat, by means of Equisier's irrigator, considering the irrigation the principal curative agent, and therefore employing indifferently solutions containing salt, alum, or the chlorates.

In mild cases alum gargles as the only local application have proved sufficient. Gargles with alum and red-oak bark are proposed for severe cases; but tannin and alum seem to be useless, at least in Dr. Wells' experience. Baudelocque applied powdered alum to the nostrils by means of a souffloir; Daviot thought it useful only in the early stage of the affection.

A method mentioned by Dr. Perror (*L'Union*, 53, 1856), has been revived and modified by Dr. Bigelow. Perron blew alum and sulphate of zinc into the mouth several times a day, using afterwards gargles with alum. Bigelow commences his treatment with an insufflation of one dram of powdered burnt alum, and repeats that operation as long as a tendency to the formation of the false membrane continues, alternating in the later time with tannin.

When, after a few days, the fauces become so exceedingly sensitive as to give great pain, Dr. G. W. Claiborne (*Virginia Med. Jour.*, Oct., 1859), used with good success a wash of borax, honey and myrrh.

Dr. I. S. Bristom prefers locally in all cases the employment of mild detergent gargles (*Braithwaite's Retrospect*, Jan., 1860).

A gentle stimulant, in the form of a mild lotion, say eight grains of iodide of zinc to an ounce of water, is, in the opinion of Dr. W. Judkins, of Cincinnati, all the topical treatment required.

Dr. S. A. Cartwright employs a local application of his own invention, and expresses himself well satisfied with it (*N. O. Med. and Surg. Jour.*, Nov., 1859). He infuses for several days in one pint of diluted alcohol: finely powdered hydrastis root and the powdered bark of the root of the myrica cerifera, of each one ounce; three ounces of gum myrrh, and two drams of capsicum. "A piece of wool or cotton (this better), fastened to a probang, saturated in the above tincture, is the best thing I have ever found to swab the throat with."

Where the running from the nose is very excessive and offensive, a solution of chlorate of potash or better of chlorate of soda (Dr. Jacobi), or Labarraque's solution (Dr. Thomas, of New York), may be injected through the nostrils.

Fumigating the throat with boiling water and vinegar poured on catnip, and Labarraque's solution of chloride of soda added, is a method practiced by Dr. Gordon Buck, of New York. In two cases treated by Dr. Ribbins, of the same location, inhaling the vapor of warm water seemed to benefit the patient the most. Prof. Comegys testifies to the beneficial effect of inhalations of one ounce of sulphuric ether with two drams of tannic acid, a cloth being wetted with the solution and placed into the mouth.

The opinions of the profession, divided on nearly every thing connected with diphtheritis, are most decidedly opposed to each other in reference to external applications. Daviot, for instance, admits rubifacients; Wooster exhorts us never to use liniments or mustard, because they increase the anguish of the patient and do not mitigate the affection. Baudelocque applied blisters to the thigh; Daviot objects to blisters in general as having the serious inconvenience of adding cutaneous to pharyngeal diphtheritis, and Meranda, who has but little confidence in external applications to the throat, informs us that blisters are especially hurtful. Dr. Beardsly experienced no satisfactory results from external revulsives, and Dr. White, of Cincinnati, declares all external applications in the form of liniments, tincture of iodine, poultices, etc., of no benefit. According to Wooster's directions, in the first stage, while the engorgement is red and hot, cold wet compresses should be applied to the neck; further along, when the engorgement of the throat becomes œdematous, warm fomentations. Dr. G. Hull orders the outside of the neck and throat

to be well rubbed with a strong embrocation of ammonia, camphor and opium. A more extensive course is followed by Dr. A. S. Clark, who carries the thing almost too far: he advocates sinapisms to the legs, feet, hands and arms, external stimulants to the neck, and as the disease advances, fomentations of hops, poultices, etc.

Instead of all these annoying and troublesome appliances, Dr. S. M. Bigelow puts his patients from the beginning into a tepid bath of one or two hours' duration, and has that repeated every two or three days.

There is another feature in the rational treatment of diphtheritis which claims particular attention. The system is to be supported by a free, energetic and persistent tonic or sustaining constitutional treatment, besides the exhibition of general and local remedies as already specified. All authors agree, that a vigorous course, with tonics and stimulants, is an imperative requirement. Therefore the most generous diet: strong beef-tea, mutton-broth, chicken-soup, eggs, wine, brandy, and "whatever other form of nutriment the ingenuity of the surgeon, or the fancy of the patient may suggest" (Lancet Commission). "We urged," relates Dr. Wells, "and in some cases forced patients to take nourishment, notwithstanding the loss of appetite, amounting in some instances to a disgust for food." Where a sufficient amount of nourishment can not be swallowed, it must be supplied by injections.

Among the remedies proper, turpentine, camphor, carbonate of ammonia, Peruvian bark, but especially the tinctures of iron and quinine, in doses adapted to the age and condition of the patient, are usually selected. Quinine, with a mineral acid and a little lemon syrup, (Dr. Claiborne), is a very desirable preparation. Sometimes, however, there seems to be some contra-indication to the exhibition of quinine. "When the tongue is foul and the stomach irritable, it is better to withhold or suspend it. Loss of appetite, soft compressible pulse, tremulous tongue, languor and subdued expression are indications for its exhibition" (Dr. Dyas). A most comprehensive and impressive description of this part of the treatment is furnished by Dr. Bigelow. He says:

"I commence immediately with the use of tonics, stimulants, and the most nourishing possible animal food. Quinine every three hours in as large doses as can be borne; bitters composed of cinchona, columbo, camomile, quassia, bitter orange peel, etc., formed into a strong infusion, to which I add brandy and a little syrup:

"℞ Cortex cinchonæ flavæ cont.,
Radix gentianæ cont., aa ʒ ij.,
Radix columbæ cont., ʒ ss.,
Cortex aurantii,
Flores anthemidis,
Quassia amara, aa ʒ ij.,
Aqua bulliens, O. ij. M., fiat infusum;
Adde: Spiritus vini Gallici, ʒ vj.,
Syrupus aurantii corticis, ʒ iv.

"D.S. To an adult, one-half to two-thirds of an ounce five or six times in twenty-four hours.

"Strong bouillon of beef, mutton and chicken cooked together, with tapioca or vermicelli as a change, a teacupful every three or four hours, occasionally with a boiled egg. Ale, porter, sherry, brandy and water in such quantities as may be borne. During recovery I add to our already nourishing fluid diet solids, such as beef-steaks, roast-beef, mutton-chops, poultry, game, vegetables, etc. Throughout the whole course of the disease I give an abundance of such fruits as peaches, grapes, apricots, cherries, currants, raspberries, strawberries. Lemonade and morsels of ice as beverage, or soda-water and syrup of raspberries, currants, and gooseberries."

A constant supply of fresh air must not be overlooked, nor that all-important care, with the whole train of minor services, usually included in the phrase "*good nursing.*"

A few peculiar methods of treatment remain to be noticed.

During the epidemic in Augusta, in 1848, Dr. Campbell, observing that the accompanying fever was paroxysmal in character, adopted an anti-periodic medication, which proved more successful than the method previously employed.

Dr. C. Swaby Smith, of Burbage, (*Braithw. Retros.*, Jan., 1860), commences with the application of a strong solution of chlorinated soda to the fauces, and a sinapism to the throat. A gargle, containing two ounces of a solution of chlorinated soda, two drams of the tincture of myrrh, and six ounces of water, is to be used every half hour. Where the children are too young to gargle, the throat may be frequently washed with the same mixture, by means of a piece of sponge. Internally: chlorate of potash, two drams; dilute nitric acid, two drams; Battery's solution of cinchona, one dram; water, six ounces. About the sixth part (varying according to the patient's age) to be taken every two hours. If there is much pain in the limbs, a few minims of the tincture of colchicum are added, which addition has proved highly advantageous. The diet to consist of strong beef-tea, port-wine, and all the nourishment the patient can take.

Dr. G. Bottomley, of Corydon, describes (*Braithw. Retros.*, Jan.,) his plan for children as follows:

℞ Solutionis chlorini,
Syrupi simplicis, aa ℥ ss.
Aquæ distillatæ, q. s. ad ℥ vj.
M., fiat gargarisma sæpe utendum.

℞ Solutionis chlorinii, gtt. iv.
Syrupi aurantis, ʒ j.
Aquæ distillatæ, q. s. ad ℥ ss;
M., fiat haustus, secunda quaque hora sumendus.

The dose is increased according to age. Calomel in one grain doses and more. Diet: concentrated jellies, strong beef-tea, wine, etc.

Dr. J. C. S. Jennings, of Malinesburg, (*Braithw.*, Jan.,) has adopted a rather rough treatment, and institutes it invariably in all cases, regardless of sex, age, or incubation of disease. First, an active emetic of antimonial wine, from half an ounce to an ounce, according to age; then free cauterizations of the throat with solid nitrate of silver; mustard-poultice from ear to ear; the feet and legs plunged into a hot bath, and the patient confined to bed. After the operation of the emetic, a cathartic of calomel and compound extract of colocynth; four hours afterwards this mixture:

℞ Quiniæ disulph, ʒ ss.
Potassæ chloratis, ʒ j.
Acidi hydrochlorici diluti, ℥ ss.
Aquæ, ℥ viij.
M., fiat mistura, cujus sumatur pars sexta quartaquaque hora.

At the same time a gargle of chlorine solution is directed to be prepared frequently, by saturating water with the protoxide of chlorine, generated from two parts of chlorate of potass., one of hydrochloric acid, and one of water. The fauces are to be sponged out with this frequently.

Greatly at variance with all others is the method detailed by Dr. B. E. Cotting (*Boston Med. and Surg. Journ.*) While disapproving bleeding, leeches, cupping, blisters, sinapisms, mercurial and drastic purgatives, emetics, cauterizations, he restricts the therapeutical applications to almost nothing. "Mild and nutritious diet, including, if possible, such articles as the patient willingly accepts, is to be preferred to abstinence, certainly to a stimulating course. The inhalation of watery vapor, by an inhaler or other practicable expedient, is often, not always, very agreeable; and if it is not very effective, it is at least without objection. A warm fomentation, or, better still, a warm emollient poultice, covering the whole anterior half of the neck, is probably of service. But above

all, anodynes, sufficient to subdue restlessness and insure quietude, are the most important agents. The particular form is of little consequence. Dover's powder, or an equivalent containing the strength of a grain of opium and a grain of ipecac to the ounce, is a very convenient form. The ipecac, however, is not important. Mucilaginous drinks are generally acceptable." From his own statements, it appears that Dr. Cotting was not very happy with this lenient treatment, as old as the history of medicine thought it to be.

Stranger still, but far more successful, appears a plan which Prof. E. S. Cooper adopted (*Boston Med. and Sur. Jour.*, Jan. 5, 1860; *Pacific Med. Jour.*, Jan.), after despairing almost of achieving any thing against the fatal disease. With his treatment he lost only one patient out of thirty-one; and this entitles his proposition to a consideration it could otherwise hardly claim, with all its originality. No applications to the throat are used by him. An embrocation of chloroform (three ounces), cod-liver oil (twelve ounces), and spirit of turpentine (two ounces), is applied freely all over the neck, breast, and abdomen, upon flannels covered with oil-silk. For internal use he gives this mixture: Ext. glycyrrh., three ounces; acacia gum, one ounce; antim. tart., one grain; sacch. alb., two ounces; aqua, 18 ounces. Give a wineglassful every two hours to a young child, say two years old, and increase in proportion to age. During this treatment, not a particle of any thing else is allowed—not a drop of water, nor the least nourishment, save what is in the medicine.

Whatever method may be followed, it seems to be essential to continue both general and local treatment for some days after the disappearance of all morbid symptoms.

Experiments with tracheotomy in diphtheritis have not been wanting. On this continent it has been strongly objected to, and is stated to have never been successful. With Bretonneau it was the last resource; he operated three times, saving one patient. In France the operation has been defended and performed up to the present time. Dr. Bigelow follows Trousseau in recommending it, adding that it must be done earlier than in croup, before the vital powers are too low. A method peculiar to Dr. Bigelow is the insufflation of alum into the pharynx, and as far as managable into the larynx, through the tracheal tubes, immediately after the operation, and repeated according to circumstances.

In conclusion, the sequelæ of diphtheritis ought to come in for their share of the treatment; but the reports are in this regard almost too meagre. Dr. Bigelow merely alludes to iron tonics, a generous diet, cold affusions, warm clothing, and exercise in open air, for the cure of the subsequent paralysis.

In slight cases, sulphate of zinc and quinia have proved sufficient. According to Dyas, the blood must be supplied with its normal proportion of hæmatosin; and this is to be effected through the agency of preparations of iron, with a generous and supporting diet. Sulphur baths, electricity, preparations of zinc and valerian, are occasionally valuable auxiliaries. The same treatment will be required for strabismus, presbyobia, and other ailments sometimes following diphtheritis. Dr. Meranda's cure of the first named, by spigelia and calomel (given in consequence of an imagined connexion with worms), was evidently an accidental occurrence. Jackson's compound syrup of phosphates has been recommended, and Churchill's preparations of the hypophosphites may be still better; but the remedy principally to be relied on, as well for the general and local treatment of diphtheritis itself as for all affections following it, is undoubtedly iron.—*Cincinnati Lancet and Observer.*

Pharmaceutical Department.

By THOS. E. JENKINS, Pharmaceutist.

ON FLUID EXTRACT OF WILD CHERRY BARK.

By William Procter, Jr.

The recipe for this preparation, published at page 108, vol. 28, (1856,) has been received with such general favor that it may be looked upon as an established formula, and probably is, in substance, the one to be adopted in the revised edition of the United States Pharmacopœia. In a paper on fluid extracts read before the American Pharmaceutical Association last year, and published in the November (1859) No. of this journal, I included a process for this fluid extract of double the original strength, so as to be in the proportion of an ounce to the fluid ounce in accordance with the general strength adopted in that paper; but at the same time it was doubted whether the bark could be properly extracted and condensed in so small a bulk without the loss of a portion of its valuable qualities. As the strength of eight ounces to the pint gives the dose a teaspoonful, the Committee of the College of Physicians of Philadelphia adopted the formula as originally proposed, in preference to the stronger preparation.

The object of this note is to offer a few hints in regard to

the details of the process, which have been suggested by considerable practical experience with the manipulations required.

Wild cherry bark contains amygdalin, a bitter principle not yet isolated, tannic acid, resin and fixed oil, besides other less important matters. It is desirable to get all the amygdalin and the bitter principle and a part of the tannic acid in the fluid extract, while the remainder of the tannic acid and all of the resin and fixed oil should be excluded. In order to render these comments intelligible to the reader who may not have the volume for 1856 at hand, I will recapitulate an outline of the formula, with the quantities altered for a gallon of the fluid extract.

Take of	Wild Cherry Bark (Cerasus serotina)	64	ounces	Troy.
	Sweet Almonds,	8	"	"
	Granulated Sugar (pure),	96	"	"
	Alcohol (U. S. P.),			
	Water, each a sufficient quantity.			

Macerate the bark (powdered and passed through a No. 60 seive) moistened with two pints of alcohol, for two hours, pack it firmly in a cylindrical percolater, and gradually pour on alcohol until twelve pints have slowly passed. If the powder has not been carefully prepared as directed, the passage of the liquid must be regulated by a cork or stop cock. The tincture is then poured in a still, and ten pints of alcohol drawn over by distillation, the residue is evaporated to a syrupy consistence, and, while hot, mixed with two pints of cold water. Separate the resinous and oily matter which precipitates, and evaporate the liquid again till all traces of alcohol are removed. The almonds, without blanching, are now to be thoroughly beaten, with a little water, until reduced to a smooth paste. (This part of the operation is most effectually performed in an iron mortar with a flat-faced pestle.) They are then rubbed down with sufficient water to make the emulsion measure four pints, without straining it. This is then incorporated with the syrupy extract of the bark in a bottle, securely closed, and agitated from time to time for 24 hours, at least, and unless the weather is very warm 48 hours will be better, as on prolonged contact of the almonds with the amygdalin of the bark, depends the development of the hydrocyanic acid and volatile oil. The liquor is now thrown on a cloth, rapidly and forcibly expressed, to remove the solid residue, which is reserved, and the liquor filtered through paper into a gallon bottle containing sugar. If the liquid, thus obtained, is not sufficient to dissolve the sugar by agitation and make the measure of a gallon, pour water on the dregs in the cloth, express and filter until sufficient liquid is obtained to make

that measure, and strain. The most annoying part of this process is frequently experienced in the extreme slowness with whicn the liquid passes the filter (owing to the fixed oil and fine particles of the almond paste,) and the consequent tendency to loss of strength by the prolonged exposure. After many experiments, with gelatin, etc., and various filters, I have found the most satisfaction from the following plan: For the quantities mentioned take half a pound of prepared chalk, triturate it in a mortar with some of the turbid liquid, add it to the remainder, and shake the mixture well several times. It may now be poured at once on a muslin filter supported in a large funnel with ribs, when the liquid, which at first is cloudy, soon becomes transparent and passes with considerable facility. When the liquid ceases to pass, pour on water carefully to displace the portion retained in the chalky sediment. The chalk in no respect injures the preparation, having no reaction with any of the principles present that are medicinally important.

ANALYSIS OF MILK.

By John M. Maisch.

It is conceded by all who live in our large cities, that a vast quantity of poor, diluted or adulterated milk is consumed therein. I have lately had occasion to examine a specimen, left with me by a milk dealer, to whom it was delivered by a farmer as pure and fresh country milk. The appearance of it already excited suspicion, it looked rather bluish and was decidedly "thin" when tasted. It was neutral to litmus and turmeric, and did not effervesce with acids.

Tested with the lactometer, it showed at 60° rather more than one-half water. To obtain certainty on this point, the caseine was collected from 2000 grs. of this milk; after washins with ether and drying it carefully, it weighed 86 grs., making 4·3 per ct. According to Knoblock, good summer milk contains between 8·40 and 8·67 per ct. together with the insoluble salts, (see Lehman's Physiol. Chemistry). The butter obtained from the ethereal solution weighed 20 grs. or one per ct.; there was, however, a little butter floating on the surface which could not be mixed with the milk by agitation and had therefore to be neglected. Good milk contains between 3·13 and 5.10, an average of about 4·25 per ct.

There is no doubt but this milk contained one-half its measure of water; but from the small amount of butter, it may be possible that it was manufactured from fresh milk and skimmed milk each one part, and water two parts. I have examined it for chalk and magnesia, but found it free from both.

ACTION OF DIFFERENT MEDICINES ON THE MENTAL FACULTIES.

By Prof. Otto.

All stimulant and exciting medicines increase the quantity of blood that is sent to the brain. If this quantity exceeds a certain amount, then most of the faculties of the mind become over-excited. Nevertheless the degree of this action is observed to vary a good deal in different cerebral organizations; and it is also found that certain stimulants exercise a peculiar and characteristic influence upon special or individual faculties. Thus ammonia and its preparations, as well as musk, castor, wine, and ether, unquestionably enliven the imaginative powers, and thus serve to render the mind more fertile and creative. The empyreumatic oils are apt to induce a tendency to melancholy, and mental hallucinations. Phosphorus acts on the instinct of propagation, and increases sexual desire; hence it has often been recommended in cases of impotence. Iodine seems to have a somewhat analogous influence; but then it often diminishes, at the same time, the energy of the intellectual powers. Cantharides, it is well known, are a direct stimulant of the sexual organs; while camphor tends to moderate and lull the irritability of these parts.

Of the metals, arsenic has a tendency to induce lowness and depression of the spirits; while the preparations of gold serve to elevate and excite them. Mercury is exceeding apt to bring on a morbid sensibility, and an inaptitude for all active occupation.

Of narcotics, opium is found to augment the erotic propensities, as well as the general powers of the intellect, but more especially the imagination. Those who take it in excess are, it is well known, liable to priapism. In smaller doses it enlivens the ideas and induces various hallucinations, so that it may be truly said that, during the stupor which it induces, the mind continues to be awake while the body is asleep. In some persons opium excites inordinate loquacity. Dr. Gregg says that this effect is observed more especially after the use of the muriate of morphia. He noticed this effect in numerous patients, and he then tried the experiment on himself with a similar result. He felt, he tells us, while under the operation, an invincible desire to speak, and possessed, moreover, an unusual fluency of language. Hence he recommends its use to those who may be called upon to address any public assembly, and who have not sufficient confidence in their own unassisted powers.

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If the psychological action of the medicines were better known, medical men might be able to vary their exhibition,

according to the characters and mental peculiarities of their patients. The treatment of different kinds of monomaniacal derangement also might be much improved; and it is not improbable but that even a favorable change might be wrought on certain vicious and perverse dispositions, which unfortunately resist all attempts at reformation, whether in the way of admonition, reproof, or even of correction.—*Amer. Drug. Cir. and Chem. Gaz.*

Editorial Department.

Our compositors have been too active for us, and have left so little space for editorial matter, that we have been compelled to place all that we had prepared for this issue aside, as the articles were too long to be wedged in. The friends and acquaintances of Dr. Sollum will please accept this explanation, and be assured that he will receive attention in our next.

The Library of the University of Louisville having been re-arranged and examined, it has been ascertained that several books belonging thereto are in the hands of others or have been destroyed.

We therefore call upon those who have books belonging to the Medical Department of the University to return them at once; or if they have so many that this can not conveniently be done, then at twice or several times.

In this connection we copy from a "Christian Inquirer," of old date, the following:

PROCLAMATION

For a Day of Remembrance, Honest Dealing, and Restitution in the Commonwealth of Letters.

Whereas, It appears that certain generous people, ready to aid the "diffusion of knowledge," are in the habit of committing books of value to certain unpunctual borrowers, of short memories; therefore,

By the advice and consent of many sufferers, expressed or taken for granted, Wednesday, the 1st of January next, is hereby appointed to be set apart as a day when all readers of every name and description, shall examine their libraries, study, and center-table, "what-nots," depositories of pamphlets

and newspapers, carefully to ascertain whether they have in their possession any volumes, bound or unbound, tracts, pamphlets, or journals, not their own property, but had and obtained simply for perusal from friends and acquaintances; and in all cases where such examination results in finding any publications, ancient or modern, big or little, prose or poetry, songs or sermons, belonging to parties who lament lost tomes, broken "sets," or missing periodicals, to forthwith do up said publications in clean paper, and by their own or more trustworthy hands, transport them home.

And it is hereby recommended, that persons who believe that books are books and not umbrellas, that lending is not giving, that debts are to be paid, and promises to be redeemed, observe and keep the day above named in the manner enjoined, in order that they may be thankful for relief from the accusations of conscience, and also to make their friends thankful for the recovery of property, the *titles* to which are vested in them, beyond all quibble or doubt.

Given in an inaudible and invisible, but most sympathetic Council of the Pilfered, this 29th day of November, A. D., 1850.

HONESTUS BIBLIOTHECARY, Governor.

Fidelis Restitutor, *Secretary.*

Fifteen years have passed since we heard the justly distinguished Dr. Valentine Mott state, that the following was the best palliative for whooping cough which he had ever seen used, and fifteen years of experience induces us to say that it is the best which we have ever seen used; and with blisters to the nape of the neck, and the hypodermic injection of atropine, etc., before our eyes, we still adhere to it with undiminished confidence:

℞	Acid Hydrocyan, - - -	gtt. vj.
	Ext. Belladonnæ, - - -	grs. ij.
	Tinct. Opii. Camph., - -	ʒ iij.
	Syr. Bals. Tolu, - - -	℥ i.
	Aq. Font., - - - -	℥ iij.

One teaspoonful to be taken four times daily, and also in the nightly paroxysms.

Physicians desiring "Visiting Lists" for 1861, will please leave their names and address with Thomas E. Jenkins & Co., corner Third and Walnut streets, Louisville, Ky., without delay.

MONTHLY MEDICAL NEWS.

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ON THE SITUATION OF FISTULA IN ANO, AND THE USUAL COURSE OF THE ULCER.

BY F. RIBES, M. D., ETC., ETC.

(Published in 1826 in the 9th volume of the "Memoires de la Societe Medicale d'Emulation"—p. 85.)

In 1799 I announced for the first time, in my course upon Surgical Pathology, that for sometime I had been making investigations for the purpose of ascertaining the precise hight of the internal orifice in fistula of the anus. What I then said upon the situation of that opening and upon the direction taken by the fistula, was afterwards repeated in some brief and incomplete articles—so incomplete, in fact, as to induce me, in January, 1820, to publish in the first number of the "*Revue Medicale*," the result of my observations upon this subject. My more recent researches having strengthened and confirmed my previous views, I now unite in this paper the total result of my labors, the occasion of which it may be well first to set forth.

In Desault's time—animated by the greatest devotion to the science of surgery, and pursuing it with an enthusiasm which he communicated to his numerous hearers—he introduced many changes in various surgical operations, which he believed susceptible of a higher degree of perfection.

Sabatier, a man of exquisite discernment, possessing less enthusiasm but a sounder judgment than Desault, did not adopt the changes which the latter had introduced, but continued to treat fractures of the clavicle, of the neck of the femur, and of the patella, by position and simple bandages, with complete success. A director and straight bistoury were the only instruments employed by him in the operation

for fistula in ano. In common with all the students of that day, I looked upon the practice of Desault as the hight of art, and upon his processes as infallible.

Fistula in Ano.—I have stated that a grooved director and straight bistoury were the only instruments employed by Sabatier in operating for this malady. Experience had satisfied me that his treatment of fractures was sound, but not being equally convinced of the advantages of his method in fistula, I one day in conversation with him observed, that although when the internal orifice of the fistula was near the verge of the anus his operation was quite practicable, I did not see how he would proceed with his two instruments in case the opening should be found beyond the reach of the finger, or the intestine be extensively denuded. He replied that during a practice of forty years and the innumerable operations for fistula which he had performed, he had always found the internal opening near the margin of the anus; that the grooved director had always proved sufficient, and in fact, his operation appeared to him effective and simple, and indeed, difficult to be improved upon. "If the internal opening of the fistula," added he, "is ever found beyond the reach of the finger, it must be very rarely, for I have never met with a case. If, however, such should be met with, the greatest care should be employed in the operation to prevent copious and dangerous hemorrhage."

"Sometimes, it is true," continued he, "we do not find an internal opening in fistula, and the probe, consequently, can not be carried into the rectum. In such cases, particularly if the intestine be denuded, the opening should be made as high as possible and the cut should include the whole of the denuded portion; and although the fissure then remains upon one of the lips of the wound, it is asserted that the cure is not impeded. I believe myself, that an operation conducted in this way would be unsuccessful, for the disease would recur by reason of the opening which would still remain and continue to allow stercoral infiltration into the surrounding tissues. Thus when the probe fails to reach the rectum by the internal opening, I would advise no operation, but should council delay. But when, following the fistula, we penetrate directly into the rectum, no delay is necessary. We then operate with certainty of success."

"If the rectum," continued the learned Professor, "be found extensively denuded by the destruction of the cellular tissue, in a blind external fistula, we judge that adhesion of its walls can not take place, such circumstances being opposed to the union of the parts. It then becomes necessary to divide the intestine longitudinally from the upper part of the ulcerated surface to the bottom, in order to throw the fistulous track and the rectum into one; thus the whole of the sinus would be exposed, and present a surface uniform with that of the intestine, so that no injury could be caused by the passage of the fæces; it would then heal without difficulty. I believe, however, that this operation is not without danger, for in slitting the intestine so far, the operator is liable to open some of the larger arteries, giving rise to troublesome and often dangerous hemorrhage. In such cases I should not operate, but content myself with leaving the disease to nature, trusting that the parts would ultimately re-unite. The bladder distended with urine, and the rectum almost always filled with stercoral matter, occupy a large part of the pelvis. The parts beneath the peritoneum pressed downwards in the viscera of the abdomen, and upwards by the elasticity of the integuments of the perineum, tend to fill up the void formed in the process of ulceration. The external sphincter and still more the levator ani also press upon and partly close the opening. It is not possible that all the cellular tissue of this region should be destroyed; more or less always remains, which by growth may reunite the parts, and the fistulous sinus will often heal without an operation, where no local or constitutional vice exists to prevent it. If it should be otherwise, the patient becomes emaciated, the disease fatal, and any operation useless."

"In conclusion, after what I have said to you, and after what you have seen of my practice since you have been with me, and still more from the results of your own observation, you will be convinced that the operation for fistula in ano is the most simple in surgery; in fact, you must be astonished that so simple a thing has been so complicated by those who seek to create difficulties for the satisfaction of overcoming them."

I attached too much importance to the observations of my

illustrious master not to resolve to examine the bodies of all the patients dying with fistula in ano to which I could obtain access. I now present the result of my labors. Before presenting what I have to add to what is already known relative to this disease, I will rapidly trace the anatomical arrangement and relations of the anus and adjacent parts.

Of the Anus.—This opening is more or less depressed, according to the sex. In the female it is small and deeply seated between the ischiatic tuberosities, which are more widely separated and divergent than in the male, in whom the orifice is less deeply placed, a disposition which is doubtless dependent upon that of the tuberosities of the ischium. In the female the union of the skin of the perineum with the mucous membrane of the rectum is easily seen, while in males it is necessary to draw upon the skin with some force to obtain a view of the point of junction. In consequence of this disposition of the parts, operations for fistula are more easily performed upon women than upon men.

Of the Rectum.—When the intestine is distended, its cavity has the appearance of a reversed arch or vault. The internal tunic of the rectum is much more voluminous than the muscular coat, and they are united by a very lax cellular tissue, so that when the muscular portion contracts the mucous membrane falls into folds, giving it a rugose appearance. These rugosities, which disappear when the rectum is distended, but always reappear on the least contraction, are situated transversely, occupying the superior three-fourths of the intestine, and also exist in great numbers, but running longitudinally in the inferior portion.

There are visible upon the whole extent of the internal face of the intestine the orifices of the mucous ducts, but it is difficult to say whether these openings are in the direction from below upwards or the reverse, or simply towards the longitudinal axis of the bowel.

A little above the margin of the anus, I have often found three or four depressions, resembling, somewhat, those which are found at the origin of the aorta and pulmonary artery, except that they are not so large; their direction is from below upwards.

I for a long time, but fruitlessly, sought for the semi-lunar

folds which have been said to exist at this point, though recently I have met with them in a few subjects. I have seen one having four depressions, each supplied with a little membranous fold, like a delicate valve; upon other individuals I have never seen more than three. These folds have a semi-lunar form, the free edges being directed upwards upon the side of the intestine and slightly concave; the adherent edges were convex and directed downwards. They are found only in the inferior portion of the intestine, near the point where the skin and mucous membrane unite, so that the superior borders were at the hight of three or four lines from the margin of the anus. These folds are formed entirely from the mucous membrane. In the intervals of these depressions, I have observed something furnished with membranous folds, having the appearance of little lacunæ, with openings looking upwards. Upon careful examination of the bottom of these depressions, I have never discovered any opening, but have always found them perfectly smooth and glossy. It is to be remarked that these depressions and little valves are situated immediately upon or over the hemorrhoidal plexus of vessels, so that a very slight ulceration occurring in them would penetrate into these veins and give rise to fistula.

Glisson and Ruysch have long since observed these little valves in this part of the rectum. Morgagni found, in two subjects, true valves instead of simple folds; in one they had a circular form, and in the other they were crescentic; they were situated a finger's breadth within the anus. The whole internal surface of the rectum is continually moistened by a mucous fluid secreted from the internal tunic of the intestine.

The internal sphincter and the hemorrhoidal plexus are found in the inferior portion of the rectum, between the mucous coat and the longitudinal muscular fibres. After dissecting off the inferior portion of the internal coat of the rectum, we perceive first the hemorrhoidal plexus. This plexus anastamoses above with the internal, below with the external, and in the center with the middle hemorrhoidal veins. Internally the hemorrhoidal plexus is in relation with the mucous coat of the intestine, and when any of this plexus become dilated at this point, this membrane is distended within and becomes thinned and of a bluish hue,

so that the tumors have the appearance of not being covered by the membrane, which actually seems absent. Nevertheless when carefully dissected we can remove the mucous coat, and find beneath the proper coat of the hemorrhoid.

Externally, this plexus is in relation with the internal sphincter, but what appears particularly important to observe is that some rather large branches of this plexus diverge, traversing the muscle, passing outward, then descending upon its external surface to its inferior border, return to communicate anew with the inferior hemorrhoidal vessels, so that the internal sphincter, with those who suffer much from hemorrhoids, is traversed, and in a measure embraced by many large veins, giving it a somewhat cavernous appearance. This disposition is most apparent in the bodies of those who during life have not been the subjects of hemorrhoids. It should furthermore be remarked, that the hemorrhoidal plexus, and the veins from which it originates, are more or less dilated and varicose in the neighborhood of hemorrhoids.

By inflating the inferior mesenteric vein, the hemorrhoidal plexus can be distended, and the cellular tissue of the inferior part of the rectum, near the anus, rendered emphysematous. Oil of turpentine, colored black, being injected into this vein, passes into the hemorrhoidal plexus and permeates the cellular tissue about the margin of the anus.

The hemorrhoidal veins, distended by the blood which they contain, become varicose, and if from any cause the blood, instead of returning by these veins, descends and is effused about the lower and inner part of the anus, in the openings of the cellular tissue which communicate with the hemorrhoidal veins, a hemorrhoid is formed. Thus the dilatation of these veins gives rise to varices, and the blood issuing from them and spreading itself through the cellular tissue, around the inferior part of the rectum, and the verge of the anus, produces the hemorrhoid properly so called.

If the ramifications of the inferior mesenteric vein, of a subject dying with hemorrhoids, are traced out, they will always be found to terminate in these sanguineous pouches, which, when completely removed, appear suspended to them like a bunch of grapes.

These little sanguine tumors are liable to enlargement and

tumefaction, accompanied by acute pain. If they open themselves externally, the blood is evacuated and the patient is temporarily relieved. If the piles are internal, the blood escapes by the anus, but the stercoral matters filter through the ulcerated point, penetrate the hemorrhoidal sac, cause it to inflame, establish an abscess, and finally produce a fistula in ano. Of a hundred fistulas, in this region, ninety-nine are produced in this manner.

Without doubt this assertion will appear exaggerated to those who believe that an abscess formed in the pelvis near the rectum can and does penetrate into it at a greater or less distance from the verge of the anus. Pointed foreign bodies or missiles shot from fire-arms, may pass through the perineum or pelvis into the rectum; and these, together with ulcers formed upon some portion of its *internal* surface are able to produce fistulas having an internal opening at a considerable distance within the intestine. Foreign bodies, descending from the stomach, *may* be arrested high up in the rectum, ulcerate it, and cause a fistula so high as to be even beyond the reach of the finger.

In order to test the grounds upon which these opinions are founded, we will examine what takes place under these circumstances, aud in what condition the parts are found. We shall then learn what is the *ordinary* hight of the internal fistulous opening and what course it takes.

In the operation of lithotomy, it sometimes occurs that the rectum is accidentally wounded. When this happens, the wound of the intestine is generally above the inner sphincter, and the result is often a vesico-rectal fistula. It would seem, at first view, that the humidities of the rectum, the sojourn and passage of fæcal matter, would, under these circumstances, render stercoral fistula of common occurrence, but we do not find, on reference to the authorities, that fistulas, the result of accidents in the operation for stone, often require an operation for their cure. Desault, to whom this accident occurred, immediately incised the rectum from the puncture to the anus. But was so much haste necessary? Would not the patient have recovered without this operation?

Colonel Ciceron, son of one of the principal employes of the "*Polytechnic School*," received, in the attack upon the

bridge of Montereau in 1814, a gun shot wound. The ball penetrated the pelvis, traversed the bladder and rectum, and was voided by the anus some days after, while the patient was at stool. This officer became the subject of urinary fistula which caused him great trouble, but notwithstanding the wound of the rectum, he had no anal fistula. The following case I published in 1819. A small body of troops belonging to the second batallion of the Lower Pyrenees, while traversing a mountain gorge, were attacked by a party of Spanish in ambush upon the hights. A lieutenant of this troop received a ball in the middle of the right buttock, which drove before it a fragment of the superior border of the ischiatic notch, passed into the pelvis and penetrated the rectum. He lost a large quantity of blood, both by the wound and by the anus. Nevertheless, fear of falling into the hands of the enemy gave him strength; he marched three hours without a halt, but on arriving at a station, after a little repose, he suffered from great pain and tension in the hip and leg of the wounded side. His belly was also somewhat tender and painful. He was transferred to the hospital of which I had charge. He was still bleeding. For many days he was unable to go to stool without passing blood by the rectum; but on the sixth day, having a slight diarrhea, the ball was voided with the fæces. The external wound suppurated profusely. Pus and bloody matter passed also by the intestines. At the end of six weeks he appeared entirely well, and ready to leave the hospital, when the right side of the perineum swelled and became hard and painful. The skin of the part was of a purplish hue, seeming to indicate a gangrenous condition. I believed that the opening made into the rectum by the ball had allowed the passage of fæcal matter, and given rise to a stercoral abscess. Becoming soft and fluctuating I plunged the bistoury into the tumor, giving vent to a great quantity of very offensive pus. Neither with the probe nor finger, however, could any opening into the rectum be discovered, and I remarked that the walls of the intestine appeared to be thickened. At the expiration of few days, pieces of clothing were discharged from the opening, and about a month after, I removed a portion of bone, apparently a fragment of the superior border of the ischiatic

notch. It was circular and rough for three-fourths of its circumference, the remaining fourth being regular, nearly smooth, concave, and a little notched. After its removal the suppuration gradually diminished, and the patient was in a little time discharged, completely cured.

The escape of the ball by the anus, in this case, did not permit me to doubt that the intestine was wounded, and I at first regarded the abscess that formed as stercoral, but after it was opened and the bits of clothing and especially the fragment of bone were discharged, I in a measure modified my opinion, but was not fully assured for a long time after the closure of the perineal opening. When I quitted the army at Figuieres, a year after, this officer, whom I often met in our marches, learning that I was about to leave for Paris, came to see me. I examined the cicatrices and found them perfect and firm, and in spite of all the fatigues of the campaign they had remained so.

It would be an endless task if I should undertake to cite all the interesting cases reported by M. Larrey in his "*Memoires de Chirurgie*," (vol. II, p. 162), of wounds from balls which have traversed the bladder and rectum, of which the patients were perfectly cured without any appearance of fistula.

I have sought in vain, in all the authorities, for cases of fistula in ano, resulting from gun shot wounds, in which the internal orifice was above the reach of the finger. I will now endeavor to demonstrate that the reason for the non-existence of such fistulas lies in the conformation of the rectum and in the mode of action of the parts concerned in the process of defecation.

Ulcers may form in any portion of the mucous coat of the rectum, and I have often met with them in consumptives. These ulcers are deep, with hard, raised, and unequal margins, but I have never known them to be the cause of fistula, unless they were formed near the margin of the anus.

Finding myself, while on duty with the army, at Valladslid, in company with the late Dr. Bayle, who had made many investigations upon the subject of ulcers of the intestines in consumptives, I inquired of him if he had met with cases where these ulcers, when placed at a considerable hight within

the rectum, had resulted in fistula in ano. He replied in the negative, and as Bayle himself was the subject of fistula, he wished to know of me whether the fistulous ulcers of consumptives had any local peculiarities. I answered him that observation had satisfied me that fistulas in such cases might be of two kinds. One, and the most common, does not differ from the ordinary fistula—resulting, like it, from derangement of the hemorrhoidal circulation. The other was really peculiar to consumptives. It is the consequence of an ulcer, analagous to those occurring in other parts of the intestinal canal; but it is found only when the ulcer is situated at the inferior portion of the rectum, and penetrates into the hemorrhoidal vessels. On introducing the finger into the rectum its hard and unequal edges are easily distinguished. When the bodies of such subjects are opened, and these ulcers compared with those in other portions of the intestines, we find them entirely analogous in every respect, except that these form the internal opening of a fistula; and I am fully convinced, from my own experience and that of others, that such fistulas are not curable, and that it is useless and even dangerous to operate upon them. Finally, without denying that ulcers of the rectum, not located over the hemorrhoidal plexus, may produce fistula, I have not found that such has been proved to be the case.

Foreign bodies which have been swallowed, such as sharp bones, needles, pins, &c., may, after passing through the intestines and lodging in the rectum, cause irritation and ulceration. Many cases of fistula in ano have been noted, in which foreign bodies have been found, which doubtless were the cause of the difficulty; but it is probable that these fistulas never have their internal orifice so much as a finger's length beyond the anus, for it seems difficult to suppose that these bodies, which have traversed the pylorus and passed the ileo-cœcal valve, on arriving in the rectum, which offers so large a cavity, would be able, considering the function of this intestine and the mechanism of fæcal expulsion, to penetrate the mucous membrane and cause a fistula, except at the lower portion of the rectal cavity.

I have stated that the rectum, when distended, has the form of a reversed arch or vault, that it is constantly moistened by

a copious mucous secretion, calculated to soften its contents and to enable them to glide freely and easily on their way. This secretion naturally flows downward and accumulates at the base of the rectum, where, if the least opening or fissure exists, it penetrates the cellular tissue around and causes fistulous ulceration; but ulceration which occurs a finger's length or more beyond the anus escapes such infiltration, for the mucous secretion does not accumulate in sufficient quantity to ascend so far, and notwithstanding the construction of the sphincters, a little constantly escapes by the anus.

But let us inquire now for a moment, whether the fæcal matters and the foreign bodies which are associated with them, may ulcerate any part of the rectum beside its inferior portion. When the fæcal matters reach the rectum, their presence soon excites the action of the intestine. The longitudinal muscular fibres contract and shorten from below upward; in this motion the rectum ascends a little, gliding over its contents; simultaneously the circular fibres contract, first above, and then successively downwards to the internal sphincter, pressing the fæcal matter towards the anus. In these movements, they are subjected to a pressure analagous to that resulting from the peristaltic action of the other portions of the intestinal canal, where, nevertheless, even in the most constricted parts, foreign bodies mingled with these substances, do not penetrate the intestinal walls, but reach without accident the rectum. It would be remarkable if this intestine, so large, and capable of so great distention, should be precisely the part upon which foreign bodies should be able to inflict injury; this is not probable. Here, as elsewhere, observation confirms the deductions of reason.

I have already remarked that by the action of the longitudinal fibres of its muscular coat, the rectum glided from below upwards upon its contents, which were forced forward by the successive contractions of the circular fibres from above downwards, and that this motion was favored by the free mucous secretion of the lining membrane. Arriving at the bottom of the rectum, these matters are arrested by the contracted sphincters, internal and external; but as the accumulation proceeds they are forced to yield, and in passing through

the opening of these muscles the fæces are subjected to a pressure analogous to that sustained by a piece of metal in passing through a wire-plate; such a pressure indeed, as they have not before undergone, for no part of the canal contracts with such energy as the anus, surrounded as it is by large muscles capable of acting with great force. It may be conceived that in this passage foreign bodies entangled therein are liable to pierce the mucous coat of the intestine, particularly when we remember the arrangement of the membrane at this portion of the rectum.

I have elsewhere observed that the internal tunic of the rectum is very voluminous, presenting folds or rugosities throughout nearly its whole extent, and that it yields freely to all the motions of the intestine; but while this tunic is abundantly lubricated, the muscular contraction which forces the fæces downwards, at the same time forms circular folds, presenting below a sort of perforated cushion composed of four or five duplicatures. These folds are formed of a portion of the membrane corresponding in position to the hemorrhoidal plexus and to the depressions found at that part of the rectum.

We thus perceive how foreign bodies involved with the fæcal matter, and compressed in every direction, would be liable to be arrested by the depressions and folds at this part of the rectum, by hemorrhoids when they are present, or by the rugosities of the membrane resulting from the muscular contraction at the moment of the expulsory effort. Thus these substances may penetrate the mucous coat, and causing ulceration, produce fistula, but after consideration of all these circumstances, I am convinced that foreign bodies never give rise to fistula except at the lower extremity of the rectum, and that these require for their cure only the simplest treatment.

Let us now proceed to consider the part played by abscesses of the anus in the production of fistula. These abscesses are divisible into *anomalous* and *stercoral*. In connection with our present subject, the first demands the larger share of our attention, the second being always caused by *ulceration of the rectum*, resulting in *fistula in ano*.

ANOMALOUS ABSCESSES.

These may be sub-divided into—1. *Symptomatic*, 2. *Critical*, and 3. *Idiopathic.*

1. *Symptomatic Abscess.*—CASE. A soldier at thirty, suffered for many years with an intolerable pain in the loins, especially in the right. No swelling or redness existed, nor were the parts painful on pressure, but the patient was, at times, unable to move without violent pain. He had a fair appetite and good color. His sufferings, however, threw him into a melancholy, pining, and emaciated condition. Only a vague conception of the nature of his malady could be formed, until he one day observed an enlargement upon the right side of the anus. This tumor, on examination, was found to be soft and fluctuating, and quite painless. The suffering in the region of the loins was now somewhat mitigated, the patient making less complaint and believing himself upon the eve of recovery. The refusal to open the abscess troubled him a little, but in three or four weeks it broke, discharging a large quantity of pus.

On examination, the tissues were found to be penetrated by deep and extensive sinuosities, opening at about an inch from the margin of the anus, by a circular orifice like that made by the thrust of a trocar. The surrounding skin was not reddened, but after sometime the edges of the opening became callous, suppuration diminished without being completely suspended, and although it was almost certain that there was no communication between the wound and the rectum, it was nevertheless styled a fistula of the anus. Acting upon this idea, the probe was introduced, a finger being at the same time passed into the bowel, when not only was there no opening found into the rectum, but on the contrary its walls were discovered to be considerably thickened, thus demonstrating that no fistula existed. The fact was soon completely established, when the patient, becoming more and more emaciated, fell into marasmus and died.

The appearance of the parts at the autopsy, was as follows: The whole of the right, and the anterior portion of the left side of the perineum, were entirely denuded of skin. The levator ani muscle was eroded, leaving a passage for the products of suppuration. Above this muscle appeared a collec-

tion of pus surrounding the neck of the bladder and the right side of the rectum, the walls of which were considerably thickened. A sinus followed the course of the hypogastric vessels, and continued along the inner border of the psoas muscle to its origin, leading to a deep caries which had destroyed a portion of the bodies of the last dorsal and first lumbar vertebræ. The fibro-cartilage between the bones had undergone very little alteration.

2. *Critical Abscess.*—Case. A man, æt sixty, corpulent, and the integuments of his head much tumefied, exhibiting the superficial vessels of the face, surcharged with blood and prominent; his limbs were œdematous, and the skin upon his feet had an erysipelatous tint. He suffered from attacks of fever; he lost flesh, the œdema and inflammation of his limbs disappeared, but five or six days after, an enormous abscess showed itself at the verge of the anus. This tumor was hard, painful and of a purple hue. After a few days, the engorgement having surrounded the anus and occupied a great part of the perineum, fluctuation was perceptible at the left side near the margin of the anus. An opening was immediately made two inches in length from before backwards. A great quantity of black sanguinolent matter mixed with pus was discharged. The rectum appeared to be entirely denuded. After opening the abscess the neighboring parts became gradually disengorged, and the wound slowly closed, but three months elapsed before suppuration ceased and the opening was completely cicatriced.

I regard a phlegmonous collection of this character as a critical abscess, and I believe that the disappéarance of the œdema and erysipelatous inflammation was the consequence of this crisis; but at first sight the bluish hue of the tumor gave the idea of a stercoral abscess, and subsequently the time required for cicatrization caused great uncertainty as to the reason of the delay—at one time it was attributed to the extent of the denudation, at another to perforation of the intestine, but as the introduction of the probe gave no positive evidence upon this point, it was thought wise to leave the cure chiefly to the resources of nature.

3. *Idiopathic Abscess.*—This kind of abscess occurs frequently

in the perineum, the great amount of cellular tissue in this region being exceedingly favorable to its formation.

Horse-back exercise, falls upon the perineum, a foreign body thrust into the part, are among the causes which may occasion this kind of abscess. In such cases, a point at the margin of the anus inflames; a tumor, attended with pain, heat, redness and fever, manifests itself, and is rapidly developed, and slight motion causes considerable pain. Repose, an emollient cataplasm to the part, diet, diluent and refreshing drinks, and depletion, diminish the intensity of the affection, and favor suppuration. An opening must be made as soon as fluctuation manifests itself, in order to prevent the destruction of fatty cellular tissue, not that I believe that a blind external fistula would result from such destruction, but that it is important to open the tumor in order to relieve suffering and prevent the abscess from extending too far.

We have seen that symptomatic abscesses are the depots of pus which is not formed at the point where the tumor makes its appearance, but which proceeds from the vertebræ, sacrum, or some other bone; that the critical abscess occurs in internal maladies and is ordinarily a favorable crisis; and finally, that the idiopathic abscess depends upon some peculiar local disturbance.

I have observed a great number of abscesses of these different varieties about the fundament, but have never known one to open into the rectum, and in fact, in most cases the walls of the intestine, so far from being thinned, were increased in thickness. Nature operates here as in every other part of the body. For example, when an abscess is formed external to an articulation, the capsule becomes thickened, and offers an impassible barrier to the pus, which we never find in the articulation except when the synovial membrane is itself the primitive seat of the disease.

We see in many other instances how nature is essentially conservative. A soldier, at the battle of *Mount St. Jean*, received a ball in the upper part of his head, which penetrated the cranium, and was lost in its cavity or lodged in the substance of the brain. The wounded man fell senseless. On his recovery sometime after, he was found to be the subject of epilepsy, the attacks of which came on without any

error of regimen on the part of the patient. A hard body could be felt at the bottom of the wound, but on any attempt at its extraction the man fell into convulsions, and he was consequently abandoned to the powers of nature alone, who gradually enlarged the opening in the bone and allowed the bullet insensibly to pass into it. Seven years after receiving the wound the ball was entirely excluded, and two years subsequent to this there had been no return of the epilepsy, and the recovery appeared to be complete. M. Therin, who saw the patient, has also recorded the case, which I published at a later date, and more in detail.

In that disease to which sheep are subject, known as vertigo or *staggers*, hydatids are found in the ventricles of the brain. These entozoa, instead of descending towards the base of the cranium, are insensibly advanced towards the vertex and the corresponding portion of the skull becomes thinned, soft, cartilaginous, and is finally converted into a kind of membrane—in a word we recognize manifestly the tendency of nature to expel these vermin from the interior of the cranium.

With such examples before us, it is difficult to conceive how it could have been believed that an abscess of the fundament would be directed by the vital forces towards the rectum, the walls of which constitute a firm tissue composed of many coats, rather than toward the perineum, a direction which offers to the pus a downward course, where the integuments are both thin and flexible.

The cases which I have reported, and the arguments I have advanced, show at least that if these anomalous abscesses ever cause complete fistula, the cases must necessarily be extremely rare. They might form an abscess in the substance of the walls of the rectum and cause perforation; but would this, even, result in a fistula? This question I shall not attempt to answer, for I do not believe that observation has yet led to any result in this direction.

STERCORAL ABSCESSES.

Stercoral abscesses, as allied essentially to fistula in ano, demand consideration in connection with this disease. They may be sub-divided into—1. *Tubercalous*, 2. *Phlegmonous*, and

3. *Gangrenous.* I am able to report many cases, which in a measure confirm this division.

I. I have seen a patient who had, near the anus, a tubercle about the size of a large hazel-nut, varying in size and hardness from time to time; it was insensible, and presented at no time any discoloration of the skin. The physicians whom the patient had consulted, regarded this little swelling as the result of hemorrhoids. He had been for some years the subject of this tumor, when one day he perceived upon it a little pimple, from which he accidentally removed the skin. Following this, there was constantly a slight flow of pus. The tumor decreased in size, but the patient incommoded by the dribbling of pus, determined to have the little ulcer examined. The probe was introduced and readily passed into the rectum, revealing at once the existence of fistula. The patient was operated upon, and cured in a short time. Thus, in this case, the tubercle had existed alone, independently of any other abscess.

II. I have also seen phlegmonous abscesses, presenting no symptoms of the tuberculous state, and offering no more indications of gangrene than a phlegmon in other parts of the body. These little phlegmons are circumscribed, and accompanied with heat, pain, redness, and fever. Their termination by suppuration reveals an opening into the rectum and the existence of fistula. Incision of the parts, between the two openings, puts an end to the disease.

III. The gangrenous abscess, which has also been styled the *great abscess of the fundament*, resembles very little in either form or progress the phlegmonous abscess, and is entirely unlike the tuberculous kind. It commences, generally, by a doughy, indolent engorgement, sometimes stationary for a long time, but more frequently it progresses rapidly. It is accompanied by fever and severe pain in the perineum, burning heat of the skin, dryness of the mouth, loss of sleep, and sometimes difficulty in urinating, and particularly in evacuating the bowels. When the disease first makes its appearance a hard point may be distinguished, more or less deeply situated, which increases in size and extends itself rapidly, and soon invades the greater part of the nates; as the disease advances the swelling becomes pasty, soft, and fluctuating towards the center, the skin appears

livid, and if speedy exit is not given to the pus, gangrene rapidly supervenes.

With these explanations, all stercoral abscesses may be included within the three divisions named. Nevertheless, I believe, with Prof. Richerand, who has illuminated many obscure points of surgical pathology, that most frequently these are three different conditions of one and the same disease rather than three different species of abscess.

Causes.—Although the causes of stercoral abscess have been stated elsewhere in general terms, it may not be out of place to recapitulate them here. They may be divided into *predisposing* and *exciting*.

The Predisposing Causes are connected with the various conditions of the mucous membrane of the lower portion of the rectum. The venous blood of this region, being necessitated to ascend in opposition to the laws of gravity, has unavoidably a tendency to the production of these collections. But what appears particularly to favor the formation of abscess of the fundament is the compression of the blood of the hemorrhoidal vessels toward the rectum, from the force applied to them by the contents of the intestine when in a hardened condition, and during efforts and straining at stool. There supervenes, at these times, an engorgement of the veins of the hemorrhoidal plexus, which predisposes to abscess of the anus.

The Exciting Causes.—Deep, slow imflammations and ulcerations which occur near to, or in the substance of tumefied hemorrhoids, are frequent causes of stercoral abscess. The wounds caused by foreign bodies which have been swallowed, such as spiculæ of bone or pointed pieces of metal, may also be the determining causes of abscess of the anus. Such substances, reaching the rectum after having passed the whole alimentary tube without producing any injury, may, by the contraction of the sphincters, be made to irritate, puncture, and ulcerate the parts; the resulting wound suppurates, enlarges; and sometimes the cause of the mischief may pass into the opening; stercoral matters, taking the same course, infiltrate the cellular tissue and occasion an inflammation resulting in an abscess of greater or less size in proportion to the dimensions of the opening made in the intestine.

But it appears that the rupture of hemorrhoids within the rectum, or the ulceration of the lining membrane of the lower part of the intestine, are more often causes of stercoral abscess than wounds inflicted by foreign bodies.

Without further reference to their mode of origin, ulcers of the intestine, their suppuration, and the passage of the more fluid contents and secretions of the parts through their orifice into the neighboring tissues, produce a collection of matter which is the occasion of more or less disturbance and suffering. If this matter empties itself into the rectum, the pain ceases and there is an appearance of cure, but as the opening is always less in size than the cavity, the walls rarely unite. They will probably empty themselves many times, before the patient, becoming anxious about his condition, applies to a professional man. Meantime, the matter, compressed by the surrounding parts, extends itself, burrowing in the cellular tissue, or uniting into a single collection, becomes acrid through its long continuance, and forms the different kinds of stercorous depots of which we have spoken. They cease, except in a very limited degree, to empty themselves into the rectum, and if not laid open by the knife, the matter destroying the integuments escapes, and the severity of the pain is mitigated. When the patient fails to receive the assistance of art, the opening may close, and the sac fill anew, the disease following the same course as before; or the proper means may be employed and a radical cure effected. It is not, however, impossible that a spontaneous cure should occur.

Signs.—The characteristics we have already traced are sufficient to indicate the different kinds of stercoral abscess and serve as signs; nevertheless, as they may perhaps be confounded with certain anomalous abscesses, or even with urinous infiltration, I shall sum up the leading marks by which they are distinguished.

1. It seems to me that stercoral abscess need not be confounded with the abscesses of congestion, for the latter are always preceded by pain in the lumbar region and back, and present almost as soon as they appear evident fluctuation, while the skin offers neither change of color nor augmentation of heat, and they are not painful. The symptoms of stercoral abscess are the reverse of these.

2. In the symptomatic abscess, resulting from the presence of a foreign body, the history of the case is of great importance. If the patient has received a gun shot wound in any part of the pelvis, even if the ball has not remained in the wound, the abscess may be caused by portions of the clothing, or by fragments of bone which have been broken off and thus become sources of irritation; these circumstances would be sufficient to distinguish them from stercoral abscesses. But if the rectum is implicated in the wound, the case becomes more embarrassing, and can be decided only by opening the abscess. If it is a stercoral collection, the wound remains fistulous, while the contrary occurs if it originates in the presence of a foreign body in the cellular tissue of the perineum.

3. The same rules guide us in the discrimination of critical abscesses. If they follow upon the somewhat sudden disappearance of an inflammation, or upon a herpetic outbreak, or at the end of some malignant fever, there is no difficulty in appreciating their nature.

4. Idiopathic abscesses need never be confounded with those under consideration, for when an indvidual has received a blow upon the perineum, or has recently ridden a hard-trotting horse, and an abscess appears in this region, there is no necessity for ascribing it to any other cause than the contusion.

5. The case is different with the urinous abscess, which sometimes extends to the fundament, and occasionally gives rise to mistakes in diagnosis. Nevertheless, there is no need of being deceived even here, if we remember that in such cases there will be difficult micturition and sometimes retention of urine, which has usually existed for some time previously. The situation of these abscesses will also be generally nearer the perineum than the anus; they increase slowly, and the patient suffers from pain, burning, and quivering of the affected part during the passage of urine. When opened, a sort of crepitation is heard under the stroke of the knife and the pus is diluted with urinous serum, differing from that of a stercorous abscess, which is of a dark color, and mixed with portions of gangrenous cellular tissue.

(To be continued.)

ABSTRACTS FROM FOREIGN JOURNALS.

THE USE AND ABUSE OF TOBACCO.

The following letter by Sir B. Brodie is copied from the *Times:*

"Sir: Having been applied to sometime since to join in a petition to the House of Commons that they would appoint a committee to inquire into the effects produced by the prevailing habit of tobacco smoking, I declined to do so; first, because it did not appear to me that such a committee would be very competent to discuss a question of this kind; and, secondly, because, even if they were so, I did not see that it would be possible for Parliament to follow up by any act of legislation the conclusions at which they might have arrived. Nevertheless I am ready to admit that the subject is one of no trifling importance, and well worthy the serious consideration of any one who takes an interest in the present and future well-being of society. From these considerations it is that I now venture to address to you the following observations.

"The empyreumatic oil of tobacco is produced by distillation of that herb at a temperature above that of boiling water. One or two drops of this oil (according to the size of the animal) placed on the tongue will kill a cat in the course of a few minutes. A certain quantity of the oil must be always circulating in the blood of an habitual smoker, and we cannot suppose that the effects of it on the system can be merely negative. Still I am not prepared to subscribe to the opinion of those who hold that, under all circumstances, and to however moderate an extent it be practised, the smoking of tobacco is prejudicial. The first effect of it is to soothe and tranquilize the nervous system. It allays the pains of hunger, and relieves the uneasy feelings produced by mental and bodily exhaustion. To the soldier who has passed the night in the trenches before a beleaguered town, with only a distant prospect of breakfast when the morning has arrived; to the sailor, contending with the elements in a storm; to the laborer, after a hard day's work; to the traveler in an uncultivated region, with an insufficient supply of food, the use of a cigar or a tobacco pipe may be not only a grateful indulgence, but really beneficial. But the occasional use of it under such circumstances is a very different matter from the habit of constant smoking which prevails in certain classes of society at the present day.

"The effects of this habit are, indeed, various, the difference depending on difference of constitution, and difference

in the mode of life otherwise. But, from the best observations which I have been able to make on the subject, I am led to believe that there are very few who do not suffer harm from it, to a greater or less extent. The earliest symptoms are manifested in the derangement of the nervous system. A large proportion of habitual smokers are rendered lazy and listless, indisposed to bodily and incapable of much mental exertion. Others suffer from depression of the spirits, amounting to hypochondriasis, which smoking relieves for a time, though it aggravates the evil afterwards. Occasionally there is a general nervous excitability, which, though very much less in degree, partakes of the nature of the *delirium tremens* of drunkards. I have known many individuals to suffer from severe nervous pains, sometimes in one, sometimes in another part of the body. Almost the worst case of neuralgia that ever came under my observation was that of a gentleman who consulted the late Dr. Bright and myself. The pains were universal, and never absent; but during the night they were especially intense, so as almost wholly to prevent sleep. Neither the patient himself nor his medical attendant had any doubts that the disease was to be attributed to his former habit of smoking, on the discontinuance of which he slowly and gradually recovered. An eminent Surgeon, who has a great experience in ophthalmic diseases, believes that, in some instances, he has been able to trace blindness from amaurosis to excess in tobacco smoking; the connection of the two being pretty well established in one case by the fact that, on the practice being left off, the sight of the patient was gradually restored. It would be easy for me to refer to other symptoms indicating deficient power of the nervous system to which smokers are liable, but it is unnecessary for me to do so; and, indeed, there are some which I would rather leave them to imagine for themselves than undertake the description of them myself in writing.

"But the ill effects of tobacco are not confined to the nervous system. In many instances there is a loss of the healthy appetite for food, the imperfect state of the digestion being soon rendered manifest by the loss of flesh and the sallow countenance. It is difficult to say what other diseases may not follow the imperfect assimilation of food continued during a long period of time. So many causes are in operation in the human body which may tend in a greater or less degree to the production of organic changes in it, that it is only in some instances we can venture to pronounce as to the precise manner in which a disease that proves mortal has originated. From cases, however, which have fallen under my own obser-

vation, and from a consideration of all the circumstances, I cannot entertain a doubt that, if we could obtain accurate statistics on the subject, we should find that the value of life in inveterate smokers is considerably below the average. Nor is this opinion in any degree contradicted by the fact that there are individuals who in spite of the inhalation of tobacco smoke live to be old, and without any material derangement of the health; analagous exceptions to the general rule being met with in the case of those who have indulged too freely in the use of spirituous and fermented liquors.

"In the early part of the present century tobacco smoking was almost wholly confined to what are commonly called the lower grades of society. It was only every now and then that any one who wished to be considered as a gentleman was addicted to it. But since the war on the Spanish Peninsula, and the consequent substitution of the cigar for the tobacco pipe, the case has been entirely altered. The greatest smokers at the present time are to be found, not among those who live by their bodily labor, but among those who are more advantageously situated, who have better opportunities of education, and of whom we have a right to expect that they should constitute the most intelligent and thoughtful members of the community. Nor is the practice confined to grown-up men. Boys, even at the best schools, get the habit of smoking, because they think it manly and fashionable to do so; not unfrequently because they have the example set them by their tutors, and partly because there is no friendly voice to warn them as to the special ill consequences to which it may give rise where the process of growth is not yet completed, and the organs are not yet fully developed.

"The foregoing observations relate to the habit of smoking as it exists among us at the present time. But a still graver question remains to be considered. What will be the result if this habit be continued by future generations? It is but too true that the sins of the fathers are visited upon their children and their children's children. We may here take warning from the fate of the Red Indians of America. An intelligent American Physician gives the following explanation of the gradual extinction of this remarkable people: One generation of them become addicted to the use of the fire-water. They have a degenerate and comparatively imbecile progeny, who indulge in the same vicious habit with their parents. Their progeny is still more degenerate, and after a very few generations the race ceases altogether. We may also take warning from the history of another nation, who some few centuries ago, while following the banners of Solyman the Magnificent, were the terror of Christendom, but

who since then, having become more addicted to tobacco smoking than any of the European nations, are now the lazy and lethargic Turk, held in contempt by all civilized communities.

"In thus placing together the consequences of intemperance in the use of alcohol and that in the use of tobacco, I should be sorry to be misunderstood, as regarding these two kinds of intemperance to be in an equal degree pernicious and degrading.

"The inveterate tobacco-smoker may be stupid and lazy, and the habit to which he is addicted may gradually tend to shorten his life and deteriorate his offspring, but the dram-drinker is quarrelsome, mischievous, and often criminal. It is under the influence of gin that the burglar and the murderer become fitted for the task which they have undertaken. The best thing that can be said for dram-drinking is, that it induces disease, which carries the poor wretch prematurely to the grave, and rids the world of the nuisance. But, unfortunately, in this, as in many other cases, what is wanting in quality is made up in quantity. There are checks on one of these evil habits which there are not on the other. The dram-drinker, or, to use a more general term, the drunkard, is held to be a noxious animal. He is an outcast from all decent society, while there is no such exclusion for the most assiduous smoker.

"The comparison of the effects of tobacco with those of alcohol leads to the consideration of a much wider question than that with which I set out. In all ages of which we have any record, mankind have been in the habit of resorting to the use of certain vegetable productions, not as contributing to nourishment, but on account of their having some peculiar influence as stimulants or sedatives (or in some other way) on the nervous system. Tobacco, alcohol, the Indian hemp, the kava of the South-Sea Islanders, the Paraguay tea, coffee, and even tea, belong to this category. A disposition so universal may almost be regarded as an instinct, and there is sufficient reason to believe that, within certain limits, the indulgence of the instinct is useful. But we must not abuse our instincts. This is one of the most important rules which man, as a responsible being, both for his own sake and for that of others, is bound to observe. Even such moderate agents as tea and coffee, taken in excess, are prejudicial. How much more so are tobacco and alcohol, tending, as they do, not only to the degradation of the individual, but to that of future generations of our species.

"If tobacco-smokers would limit themselves to the occasional indulgence of their appetite, they would do little harm

to themselves or others; but there is always danger that a sensual habit once begun may be carried to excess, and that danger is never so great as in the case of those who are not compelled by the necessities of their situation to be actively employed. For such persons the prudent course is to abstain from smoking altogether.

"Trusting that you and your readers will excuse me for having occupied so large a space in your columns,

"I am Sir, your Obedient Servant,

"August 17. "B. C. BRODIE."

PREACHER, PRIEST, OR DEACON.

The suggestion thrown out to the British Medical Association by the late Reverend Chancellor Martin, at the request of the Bishop of Exeter, for a union of Medicine and Divinity in a "Medical Diaconate," is of interest in its collateral aspects. It is a decided step in advance that a High Church Bishop and a cathedral dignitary should deliberately avow the opinion that Medical Science and Art can be made available to religious purposes at all. The Medical Profession has usually had scant courtesy from the ecclesiastics in this respect. The learned author of the "Religio Medici" thought it unnecessary two centuries ago to explain why he was entitled to the name of Christian: "For my religion," he says, "though there be several circumstances that might persuade the world I have none at all, as the general scandal of my Profession, the natural course of my studies, the indifferency of my behavior and discourse in matters of religion, neither violently defending one, nor with that common ardor and contention opposing another; yet, in despite hereof, I dare, without usurpation, assume the honorable style of a Christian." The general scandal referred to was embodied in the ecclesiastical aphorism, "*Ubi tres Medici, ibi dua Athei.*" The Bishop of Exeter and his late Chancellor have discovered that scandal at least.

But are these clerical reformers willing to grant the Profession that toleration of conflicting sects and creeds which the quaint author of the "Religio Medici" terms "indifferency of behavior?" If we understand the suggestions thrown out by the Bishop of Exeter the Medical Deacon is to be an inferior clerical person, subordinate to the parish priest. He is neither to preach nor administer the sacraments of the Church. He may be allowed to read prayers or the lessons, but no more. His duty apparently would be to visit the sick, and minister to their welfare in spiritual as well as corporeal matters, only under the control of the "higher"

cleric. He must, therefore, surrender his freedom of thought and action, and be High Church, Broad Church, or Low Church, as his superior is.

If this be the true character of the scheme, it requires no great penetration to see that the co-operation of the Medical Profession, as a body, with the Church, is wholly impracticable. Setting aside the circumstance that the Profession is made up of independent thinkers by the very nature of its studies, and therefore wholly opposed to ecclesiastical discipline in the sectarian sense, it is to be noted that every sect contributes its proportion of Medical practitioners. If, therefore, the Established Church secures its Medical Deacons, no long period would elapse before the Roman Catholic, Wesleyan, and other Dissenting churches would each have theirs, and thus sectarian strife would be added to the other causes of Medical disunion, already sufficiently numerous. No! no! No ecclesiastical sectarianism.

But there is already a spirit of Medical effort abroad in the direction indicated. Take the Edinburgh Medical Missionary Society for example, which educates Medical Christian Missionaries. There are, too, not a few Practitioners who minister in spiritual things in their daily professional routine. Experience, however, is not in favor of an extension of these private efforts; they have too much of the ludicrous and pretentious. In a large northern town in Scotland (where, by-the-by, every sixth birth is illegitimate), Dr. Blank visiting a lady patient lately, after duly examining the case, retired to the sideboard and audibly invoked, as was his pious custom, the Divine blessing upon his labors before prescribing; he then boldly ordered a dose of rhubarb and magnesia. We can conceive a Cheselden with a deep conviction of responsibility seeking aid from a Higher Source when life depends upon his steadiness of hand or clearness of judgment, but as to rhubarb and magnesia, we can only quote the old Pagan, and say that even in Medical matters, "*Nec Deus intersit, nisi dignus vindice nodus.*"

It is always to be remembered that the church or the churches can, if they so will, demand from candidates for the ministry any amount of Medical knowledge they may think fit. But if Medical Deacons are impossible, Medical Priests are not. And this might, upon the whole, be a good step. It would, doubtless tend, in the first instance, to raise up a brood of meddlesome quacks; but this would not be an unmitigated evil, for these would surely come into collision with, and exercise, a set of charlatans seven times more ignorant and mischievous than themselves. Then the Bishop might exercise a restraining power over the more erratic of a

Medical clergy, while it cannot be doubted that the majority would have learning and good sense enough to perceive that their Medical skill should only be exercised in subordination to the Medical Practitioner.

But there is a central point where the two Professions may meet on equal terms, and that is the pulpit. Why should not the Medical Practitioner who feels a vocation thereto be a public instructor in Hygiene, and demonstrate in Sunday evening lectures the intimate connection between health and morals? or why should *dogmatic* theology reign supreme on the Sunday and no place be left for *natural* theology? When Lord Palmerston told the clergy of Scotland, in reply to their memorial for the appointment of a day of public humiliation and prayer, with a view to avert the cholera, that a more efficient measure would be the removal of all reeking abominations, a clerical outcry was raised against his orthodoxy; but that only raised a laugh against the clergy. Every intelligent man now sees that public Hygiene is more important in its moral and religious relations than even its merely Medical aspects. The subject has passed from the blue-books to popular literature, and the hero or heroine of the latest novel is a Hygienic reformer. The pulpit is alone barren.

Now we think here is a field of large scope for combined action between the Medical Profession and any Church whatever. Let Science at least be catholic, and the black-board and modern statistics be set a-jostling the old dogmatic theology in every pulpit. Men's minds crave something new. *Toujours mouton* is a horror even theologically. It can only be a gain to bring the unthinking to church on Sunday, if but to hear a secular lecture. Imagine Professor Owen occupying the pulpit in St. Paul's, and Professor Huxley in Westminster Abbey, on a Sunday evening, with stupendous diagrams at their backs illustrative of the wonders of Creation. The Bishop or the Dean has read evening prayer; the choir has chanted an appropriate anthem—"These as they change, Almighty Father! these are but the varied God—the rolling year is full of Thee;" or a verse or two of the grand old 104th Psalm—"The glorious majesty of the Lord shall endure forever; the Lord shall rejoice in his works." Then comes the Lecturer, solemnized in thought by the place and object. Or Mr. Edwin Chadwick, or Dr. S. Smith, or Lord Shaftesbury, or the Metropolitan Officers of Health in rotation, Dr. Lankester leading them on, may expound in the metropolitan churches to crowded audiences the intimate connection between dirt and moral degradation, and awaken the sleepy parochials into vivacious activity. A few plates at the door would, we are satisfied, secure an ample honorarium

for the Lecturer. Will High, Low, or Broad Church, be the first to inaugurate *this* union of Medical Science and Art with Ecclesiastical Institutions, and support a pulpit development of the "Medical Diaconate?"—*Medical Times and Gazette.*

DEODORISATION IN OBSTETRIC MEDICINE.

By Thomas Skinner, M.D., Physician to the Northern Dispensary, Liverpool.

On the 3rd of Nov. last I communicated to the Liverpool Medical Society the value of simple tar-water as a deodorant injection in carcinoma uteri and other affections attended with offensive vaginal discharges. I then stated my belief that the active deodorising ingredient in tar-water, in Messrs. Smith and McDougall's patent disinfectant powder, and in the powders and pastes of MM. Corne and Demeaux, of Paris, was creasote, or its analogue carbolic acid, or some such empyreumatic product. I am still of the same opinion, but further investigation has convinced me that so far as the preparations made from vegetable tar are concerned, besides creasote, the oil of tar acts the most important part as the deodorising agent. I was led to this conclusion by observing that, in preparing tar-water, so long as the tar is capable of communicating its peculiar smell to water, hot or cold, does its deodorising property last. On making this observation I also concluded that the substance giving forth the tarry smell must be the active ingredient; and, as this substance is the oil of tar, I immediately instituted a number of experiments which have proved beyond any doubt, that however powerful creasote may be as an antiseptic and deodorant, it is very much surpassed by oil of tar, if not as an antiseptic, at least as a deodorant.

The oil of tar has been variously denominated oil or spirit of tar or pitch; ol. pini, ol. pini rubrum, ol. petrolei, ol. picis. ol. picis liquidæ, etc. There can be little doubt that the oil of cade, (ol. cadinum, the huile de cade of the French—which is said to be prepared from the juniperus oxycedrus, or Languedoc juniper) is frequently, at least so far as the article of commerce in this country is concerned, nothing but oil of tar. Pereira says that the oil of tar is "a mixture of various volatile constituents of tar. (Vol. ii. p. 1205, Third Edition). The samples of the commercial oil vary much; I have scarcely seen two alike in color, consistency, and smell. The best specimen I have seen is in the psssession of Mr. Wharrie, chemist and druggist, of 50, Berry street, in this town.

It was only the other day, while I was hastily glancing at the literature of the subject, that the following facts and opinions presented themselves: In the *Pharmaceutical Journal* for

1848–49, Mr. Griffin states, "Tar is a valuable ingredient in disinfecting mixtures; three pounds of tar will preserve twenty gallons of urine from putrefaction, and enable this valuable manure to be preserved or transported inoffensively." (Vol. viii. p. 14). With this great fact before us, why, may I ask, is not tar turned to some account in deodorising our street, railway, and other urinals? In another article in the same journal, by the late Professor George Wilson, on Disinfectants, Antiseptics, and Deoderants, he says, "The only other substance to which I shall at present refer is pitch-oil, one of the products of the distillation of tar; it is an antiseptic of the most powerful class, and very cheap, and if not used in excess, it is applicable as a deodoriser." (Vol. xii. p. 283.)

For the last year or more, while Surgeons, both in Paris and in London, have been actively engaged in investigating the subject of deodorisation in their own particular department, it seems strange that obstetricians should have done so little in theirs. It is not because obstetricians meet with fetid effluvia less frequently than pure Surgeons; it is not because they are less sensible to their existence from being more used to them; but it arises simply from the fact, that they have never properly directed their attention to the best means of removing them.

In the practice of Obstetric Medicine there is no more crying evil, next to pain, than the universally-complained-of bad odor, inseparably associated with the lying-in chamber, particularly the odor of the bed, bedclothes, and patient. Some are much worse in this respect than others. The chief cause of the offensive effluvia is, without doubt, the lochial discharge. We all know how disagreeable, how heavy and how sickly the odor is, particularly a few days after delivery when it is becoming paler, and is passing into the condition termed by the nurses "green water." If it is so very offensive to us, how much more so must it be to the delicate feelings of the patient, particularly of the more accomplished and refined of the sex; and, if the sickly odor is so disagreeable in private practice, where there is only one individual in a chamber, it must necessarily be worse in a hospital for lying-in women, where several are congregated together. In some of the worst forms of puerperal fever also, the vaginal discharges are sometimes so putrid, and the smell so unbearable, that I have known nurses, and even friends, feel it most irksome to approach the patient, much less to extend to her their kindly offices. These may be looked upon as among the minor advantages to be derived from the practice of deodorisation in obstetric medicine. I would now direct attention to the more important question of the saving of life by deodorisation act-

ing as a prophylactic measure in the prevention of puerperal fever and other *post partum* accidents.

Professor Simpson has shown that nearly 3,000 mothers die in child-bed every year in England and Wales alone. He says: "Among these 3,000 deaths, a comparatively small proportion only are the direct result of convulsions, hæmorrhage, rupture of the uterus, and the other more immediate or primary complications and accidents connected with parturition. The great majority of these deaths are produced by puerperal fever. (*).

Dr. Simpson here refers only to the deaths arising from puerperal fever, and not to the number of females attacked with the disease.

Granting that 3,000 females die in child-birth annually in England and Wales, that three-fourths of them—which is within the mark—die of puerperal fever alone, then that gives us 2,250 deaths annually from fever attending child-birth. Granting, also, that the mortality, in the absence of epidemic influence, ranges as high as 1 in 4, in round numbers, this will present the fearful amount of at least 9,000 women attacked annually with puerperal fever in England and Wales alone. Among the causes of this fearful scourge on puerperal females, there is one which I think has not been sufficiently recognised. I allude to the injurious influence of the *post partum* secretions and discharges of the puerperal female, and more particularly of those who have suffered from a tedious or obstructed labor, and who have been confined within the walls of Lying-in Hospitals.

In reference to the close relation which exists between Lying-in Hospitals and the origin of epidemics of puerperal fever, Professor Churchill, of Dublin, who may be looked upon as one of our best authorities on such a subject says: "From a review of the history of the epidemics of puerperal fever, it appears that there is some remarkable connection between them and the Lying-in Hospitals. I do not mean strictly to assert that the epidemics always originate in, and are kept up by these institutions, but I refer to the fact, that we have no record of any epidemic independent of them in early times." ("Churchill's Diseases of Women," Third Edition, 1850, p. 621). The members of the Academy of Medicine of Paris, in their ever-memorable debate of 1858, have put it beyond a doubt that their Lying-in Hospitals are hot-beds for the generation and propagation of puerperal fever. The very best of them are not exempt from the charge. The Beaujon Model Hospital itself lost one out of every twelve women delivered between the year 1852 and 1856. But, if we contrast the results of private practice in

* Obstetric Memoirs, Vol. ii. p. 1.

the poorest *arrondissement* in Paris (the twelfth) with the mortality occurring at the Hospital de la Maternite, the bare facts speak for themselves. In the first, where the patients are isolated and attended at their own homes, the mortality is only 1 in every 322 women delivered; whereas, in one of the first Hospitals of the city the mortality is so high that 1 woman dies out of every 19 delivered within its walls. (*Journal of Practical Medicine and Surgery*, 1858, p. 291.)

Every obstetrician in Paris is convinced of the close connection between Lying-in Hospitals and the origin of puerperal fever, and the only reliable steps which have been proposed to prevent or ameliorate the evil, have been such as will tend the more effectually to isolate each individual patient. They are all agreed that for want of this the present Hospitals are powerless to stop the occurrence of the disease or to reduce the mortality; and that, when the fever makes its appearance in the wards, for the sake of humanity the Hospitals should be closed.

As we can no longer doubt that Lying-in Hospitals and the crowding of paturient women are the fruitful sources of the origin of puerperal fever, both epidemic and sporadic, let us cursorarily examine whether or not it can arise among cases which are isolated.

Dr. Simpson, than whom no obstetrician has more carefully investigated this important subject, has said, that "in a small ward, or small Hospital, one could almost, as it were, manufacture puerperal fever at will, by crowding a great number of patients together in the same ill-ventilated room." * * * * This, no doubt, was true when this experiment was driven, as it somestimes accidentally had been, to an extreme. But it was true, also, in its lesser degree; for Dr. Simpson believed that one great cause of weed, ephemera, and febrile attacks, during puerperal convalescence, was the still too slight attention that was paid to the ventilation of the lying-in chamber. He had repeatedly, he thought, seen more or less slight febrile action set up in a patient from the curtains being closely drawn around her bed for eight or ten hours during the night, being thus obliged to breathe an air loaded and affected with the morbid animal discharges from her own body." I believe that most Accoucheurs will agree with these statements of Dr. Simpson. For myself, I can go a little further, and say, that the only case of puerperal fever which I ever saw in country practice (and it was a very bad, though not fatal one), was caused by the heaping of too many clothes upon the patient, and completely closing the bed curtains, "in order to keep out the cold air of winter," after a first labor of twenty-six hours. When I put my head within the curtains I was nearly stifled.

Without prosecuting this inquiry further for the present, I think that I am justified in concluding: 1. That the decomposition of the organic tissues and fluids thrown off by the skin and vagina of the paturient female is to be looked upon as a fruitful source of puerperal fever and other *post partum* febrile and inflammatory actions. 2. That, if such decomposition can be regarded as an agent in the development of such conditions when patients are isolated, it is evident that it must be a much more active cause in Lying-in Hospitals, where the emanations from the patients are more likely to accumulate, and lead to the generation of a peculiar miasmal condition of the air of a ward. 3. That, as the decomposition of organic matter gives rise to fetid odors, such odors in turn become sufficient evidence of decomposition and its dangers. 4. If the premises be true, then deodorisation of the lochia by an agent which stops decomposition promises fair to become a prophylactic of no mean value of puerperal fever and such like *post partum* accidents.

Any practicable means which, without much trouble and at a cheap rate, will safely and effectually relieve the parturient female of all disagreeable smell about her apartment, bed, or person; which will make the patient more comfortable and less loathesome to herself and friends; and which will at the same time assist in preventing the generation of miasma, or lessen the danger from the poisonous influences associated with putrid or morbid effluvia, must be hailed as a great addition to the Materia Medica of Obstetric Medicine. Such an agent, I think, we have in the oil of tar.

STATISTICS OF A YEAR GONE BY.

Our Registrar-General's Year-book of Disease is at all times an interesting, though by no means an easy, volume. It is a grand lesson-book for us as disease-curers, and for the public as political scholars. True, by some inexplicable circumlocution work, we never get the volume till the year it chronicles has, in the rapidly revolving time, nearly escaped our memories; but this we must bear with, for the stern figures are there, not the less to instruct because they are late, but as they instruct now, so forever while literature is read and made. Haply, indeed, Macaulay's coming New Zealander may himself leave the ruins of London-bridge to wander in the shattered vaults of Great Russell street, to search amidst other ancient papers for these annals of the lives and deaths of his great predecessors in science letters, and arts.

The last Year-book of the Registrar-General deals with 1858. The year was not one very noticeable for its sickness;

at all events, the Profession did not fatten that year, but rather took to an enforced lowering pecuniary *regime*, and lost weight. Meanwhile the population went on adding more susceptibilities to disease, if not more disease to the susceptibility. In the middle of the period the theoretical revised Census of Great Britain was 22,626,334 persons. Every day in this year, on an average, rather more than 962 sane individuals tied that knot with their tongues which everybody knows, with all deference to Sir Cresswell Cresswell, is not easily untied with the teeth; leaving still a large population of fair faces all blooming and waiting, for a ridiculously small remnant of marriageable male stuff in comparison.

While the 962 were thus daily swearing the irrevocable vows, another important process was enacting; 2080 children per day were coming into Great Britain to do their part of the business. These, by a rather large majority showed a preference for the first six months of the year, and in England and Wales the boys exceeded the girls, we mean in numbers only, in a ratio of 1045 to 1000 of *all* that were born, while to every 1000 persons of Great Britain there was an average birth-rate of nearly 34—*i. e.* of boys and girls together.

As the marriages and births progressed in the degree we have stated, Death did his best to strike the balance with Life. He did not succeed to the full, but he neared the mark to such extent that while 759,676 children, all alive, were set up against him, and 351,346 persons were put in train against him by getting married, 513,188 went over to him helplessly; Life had a total advantage over him in the end of 246,488, or of 675 per day.

Among those who filled the death rank, males predominated in England and Wales; so that for 100 females dying there were 102 males; out of equal numbers at all ages, the females being under such circumstances the most numerous, 107 males died to 100 females. To 1000 persons living in Great Britain, the deaths gave an average figure of nearly 23, or 11 less than the births per 1000.

But the record before us gives us more information. It affords us facts which by comparison are of immense interest. Thus, if we compare the vitality and mortality of France, taking of course the same averages of population, with that of Great Britain, we discover two startling truths, viz: that there are 34 births to a 1000 persons living here, and only 27 over the Channel; and reversing the question that there are 23 deaths to the 1000 persons here, and 24 over the Channel. How such a broad difference in two opposing directions must

of necessity change the populations of the two allied countries is obvious. If this hidden yet marvelous contest progresses, to what will it lead? which country shall in the end fare best—the one with the increasing or the other with the almost stagnant population? What circumstances cause such differences? These are the questions.

Turning to the causes of mortality in the year 1858, we find so much interesting matter that we dare not in this place enter upon it, except to say, that the zymotic class of diseases was less fatal than in many previous years, and that fortunately no remarkable epidemic deserves special mention; the diseases incident to intemperance, and so-called civilized customs, furnish, however, little sign of decadence.

There is one other circumstance to which we would direct attention in closing this retrospect. It would seem that although the mortality of large towns stood at 2:665, and that of the country at 2:006 per cent., there are nevertheless outer portions of great cities which present a lower mortality than the country village, with its church-yard, ivy-mantled tower, winding-walks, curfew-bell, and all else poetical to boot. Why this should be we need not wonder, for, despite the poetry, it is certain that well-built brick packed-up domiciles, with good drains and good ventilation, even with indifferent air, are preferable to the thatched huts, with their open cesspools, surface drains, and polluted wells, of what a rustic rhymster has called, with unblushing license—

"The ruralest spot upon earth,
The place of my birth—of my birth."

But we cannot follow our subject further. The British Medical Association is going to give medals for essays. Will it not tempt its provincial men to a struggle, in showing how English villages might be made a little healthier than suburban streets, and infinitely more poetical in their beauty than they now are; the art of man added to the art of Nature? The suggestion is gratis.—*Medical Times and Gazette.*

ON ALBUMINURIA, AND ITS FERRO-ALBUMINOUS TREATMENT.

By David Nelson, M. D., Edin., formerly Physician to the Queen's Hospital, and Professor of Clinical Medicine, Queen's College, Birmingham.

Case III. *Albuminuria, receiving Great Relief, but ending in Death from Cold.* Miss J. P., aged 22, was brought to me on March 6th, 1856, having been under the treatment of an irregular practitioner, as for amenorrhœa. She had been ill for about eighteen months, during which period no menses had appeared, and she had been gradually getting worse and worse. When I first saw her, she was deadly pale, and

swollen under the eyes, had no appetite, was very drowsy, and troubled with diarrhœa and pain in the loins. Her stools were pale; her urine scanty and frequent; her legs and thighs greatly swollen, being fourteen inches and upwards round the ankle; and her feet so enlarged that her boots and shoes had ceased to be of use, and she wore carpet slippers. The urine was almost one solid mass of albumen; the skin was parched and scaly; and she was frequently afflicted with vomiting. She also had a distaste of animal food, including eggs. To meet urgent symptoms, she first had alterative doses of hydrargyrum cum creta and Dover's powder, night and morning; and chalk, calumba, taraxacum, and hydrocyanic acid, twice or thrice a day. These had the effect of altering the hepatic secretions, and staying the sickness and purging; and she then began with the more special remedies. A belladonna and opium plaister was ordered over her loins. She took a diuretic mixture, had a chop for dinner, eggs morning and evening; and as the sulphates of quinine and iron seemed too potent for her stomach, she took ten grains of the carbonate and phosphate of iron united thrice a day with food. By the 27th of March, all dropsy had disappeared, except in her feet; and she felt lighter and stronger. She did not get up more than once in the night-time, and the albumen did not exceed three-fourths of the urine excreted. On April 3d, as the food with the powders felt heavy on the stomach, she had liquor pepticus. By the 12th, though she felt easy, she stated that she was tired of the powders, though they were tasteless; and, as the stomach and bowels were in good condition, she had two grains of sulphate of quinine and two of sulphate of iron, in pill, thrice a day; and proceeded with the diet as before. On April 28th, she menstruated for the first time for nearly twenty months, felt quite comfortable, had a color in her cheeks, and no swellings; while the urine was about one-third albumen. On May 1st, all the favorable symptoms continued; she had a little cough, but that disappeared under a soothing expectorant; and, as she felt nothing to complain of, and seemed to consider the return of menstruation as a cure effected, she ceased attending.

I did not see her again for nearly six months, when I was consulted on October 23d, for an attack of bronchitis. At that time, there had been no return of anasarca; the color was good; and, though very slender after the removal of the dropsical swellings, she had felt so strong as to be quite able to attend to her father's business of an innkeeper, getting up early in the morning, and setting up late at night, without distress. The father and aunt stated that they had difficulty in persuading her to take meat and eggs, etc., as ordered; and

that she took the tonics by fits and starts, neglectiug them entirely, if not looked after. However, she got better of the cough, and was to go on with the treatment advised, which she promised to do.

I did not see her again for other eight entire months, during which period it was reported that she felt quite well during the greater part of the time, menstruating regularly until one or two months before, having no dropsy nor pain. For sometime back, however, she had much neglected the remedies, her father and aunt stating that the patient seemed to think it foolish to be always taking pills and powders; that she had got tired of eggs, and disliked meat; and, besides, thought she had nothing to complain of. Her face, however, had become paler; and the last menstrual flux had been scantier and less colored than usual. When I was called to her, on Tuesday, June 23d, 1857, I learned that she had gone out with a pic nic party on the preceding Saturday, wearing thin muslin; had sat upon the damp grass, and felt cold and shivering when she got home at night, but took something warm, and went to bed. Next day (Sunday), she still felt poorly, and had a slight dry cough; but thought it would go off by keeping in bed. On Monday she felt worse, and towards evening suffered greatly from dyspnœa and general oppression; and swelling also had re-commenced. Next day when I saw her, I found the legs and face again swelled; the cough severe; the pulmonary congestion extreme; the expectorated matters tough, ropy, and glutinous; and the urine scanty and excessively albuminous. Her faculties, however, were clear. An aperient and a stimulant expectorant and diuretic mixture, were prescribed; the latter consisting of ipecacuanha, ammonia, tincture of cardamoms, and nitrous ether, with hyoscyamus. On the following day (24th), she continued oppressed and feeble, and was more swollen. The remedies employed did not appear to act. Blisters were ordered to the chest, and also behind the ears, as cerebral symptoms seemed threatening. On Thursday (25th), the blisters were found not to have acted; she seemed drowsy, stupid, and sinking; the tongue was parched and dark; and the skin dry, but exhaling a urinous odor. The face was puffed, so as almost to close the eyes; and the extremities were immensely distended. No urine passed, nor did there seem to be any in the bladder. Nothing was now ordered, beyond a little wine and water, to moisten the parched tongue. On Friday, the 26th, she was quite comatose, with dilated pupils; and died in the course of the evening, the breathing became slower and slower, and the mucus at length filling the trachea.

In this case, which was an extreme one to begin with, there

was ground, in the course of treatment, for hoping that the efforts would have proved more successful than they ultimately were. The rampant symptoms were subdued in no long time, and the patient became so well in her own opinion after two months, that she ceased to do anything beyond taking the tonic medicine irregularly. For six months nearly, she felt perfectly easy; and then was only troubled with a cough, which vanished under simple treatment. Then, again, for other eight months, fourteen in all, she did not herself feel any necessity for medical advice; and then the attack was brought on suddenly by accidental exposure to cold and damp, after a previous partial failure of health for a month or so. It appears to my mind pretty clear that the pic-nic exposure in the light dress had suppressed the cutaneous discharges; that, these being thrown upon the other eliminatory organs, the kidneys and liver had failed in ability to excrete; and that the whole retained excretions, poisoning the mass of the blood, had produced congestion of the lungs and torpor of the brain; and hence the mode of her death. In healthy persons, if one or more excreting organs fail in their functions, there are others with an overplus of capacity and energy, ready to take up the duties; and, by dint of a little brisk reaction and morbid commotion, the end is effected, and life preserved; but where vital organs of depuration are unequal to such a task, as in this instance, death is inevitable.

We should not perhaps be justified in drawing hopeful conclusions from the facts of the above case, were there no others of happier issue to be adduced; but, considering that of Emma Harris, reported amongst the older cases of 1852, who still survives, and those others which are to be presently reported, we are fairly entitled to conclude that, had not this unfortunate young woman so fondly considered herself perfectly cured, so much neglected a perseverance in the remedies and the diet, and so imprudently exposed herself in a manner perfectly out of accordance with all sound advice, she might still have lived, humanly speaking, and been able to live for a period such as we are not able to determine.

Case iv. *Albuminuria of a severe Character, terminating in apparent Recovery.* Master P., a little boy, about five years old, was brought to me on March 19th, 1858. He had been ailing for a considerable time, had lost appetite and spirit, was drowsy, stupid, and feverish; and when he complained of pain, it was in his head or his back. He had been treated for worms, weakness, and so on; and had been sent into the country for fresh air, but with no good effects. The nature of the disease had been quite unsuspected. They saw he was pale, but considered him *stout*. After exhausting the *Materia*

Medica, so to speak, the last determination arrived at was to stop all medicine; but, under that do-nothing system, he still continued to get worse. On the visit, his face was observed to be pale, puffy, and pasty; the eyes being swollen underneath, and the eyes in a great measure hidden. He had an anxious expression and suffocative cough. His bowels were costive; his urine scanty, but frequent; and the legs anasarcous, dimpling deeply under pressure. He had had no preceding scarlatina. The first remedies prescribed were aperients and expectorants; and it was about a week before the bowels were rectified and the cough subdued. Meanwhile, the urine was found to contain 75 per cent. of albumen; that is to say, on being allowed to stand and settle after coagulation, the albumen occupied three-fourths of the entire fluid. On the 25th, the little fellow was seized with convulsions, alternating with stupor. It was then stated that he had passed no urine for nearly twenty-four hours; but when Mr. Yates, of Bath Row, who was now associated with me, introduced the catheter, none was found in the bladder. In this emergency, purgatives were exhibited by the mouth, and a brisk injection administered; while blisters were applied behind the ears; under which agency he rallied, and passed both fæces and urine, the former being hard, lumpy, and variegated, partly dark and partly white. As the kidneys seemed difficult to be excited, and as the liver was sluggish, he now took alterative doses of the grey mercurial powder at night, and a brisk aperient of jalap in the morning. These rectified the hepatic secretion, and produced a quantity of watery discharge from the bowels; while, to act mildly on the kidneys, he was allowed a solution of supertartrate of potassa as a common drink. At the same time, he was dieted on meat and eggs; and had quinine and carbonate of iron with each meal, in wine thickened with isinglass, and sugared. Of the drink, however, he took so much, being thirsty, that the anasarca greatly increased, and he again seemed to have a tendency to coma. To such extent did the swelling now attain, that the scrotum became nearly as large as his head, the penis being completely buried, and the little quantities of urine that dribbled off excoriating the surrounding surfaces. The abdomen was also swelled to a high degree. This state being so distressing, and the kidneys being sluggish, we judged it advisable to tap the scrotal cavity; and, accordingly, on the 6th of April, Mr. Yates introduced the trocar. At first, the serum flowed freely; but the fluid at the end appearing to thicken, it came away more slowly. However, the drain remaining open, a very large quantity of fluid was carried off in the course of a few days; so that abdomen, scrotum, and legs, assumed much more of the natural

appearance. After this, the diuretics acted better; and he went on with the purgatives, the albumen, the quinine, and the steel, as before; the supertartrate of potassa being omitted, and small quantities of aromatic sulphuric acid, with sirup of oranges, being given to allay the urgent thirst. If it did that, and helped to dissolve the carbonate of iron in the stomach, so much the better. By the 24th of April, the purgatives (given every other morning), seemed to have induced a tendency to diarrhœa. They were therefore stopped, and an astringent administered; while the diuretics and special remedies were continued. By the 1st of May, his appetite was good, his bowels regular, and stools natural. He slept comfortably, without being moved by bladder more than once in the night. His color was better; there was comparatively little anasarca; and his tongue was clean and moist. He had no pain, was lively and playful, and less dependent on his nurse.

In this manner he steadily improved until about the middle of May, when, from some error in diet, arising from the visit of a grandmother, who indulged him, in mistaken kindness, with many unwholesome dainties, and late going to bed; he had fresh threatenings of convulsion, with disordered stomach and bowels, and some increase of anarsarca. A short course of purging was then resumed, and afterwards he returned to the diuretics, the quinine, steel, albumen, and peptic liquor, having been continued throughout. At the end of May he was playing about, had a good color and appetite, slept soundly, and complained of nothing whatever. There was only a little œdema of the feet and ankle at night when he had been setting up long. The albumen, at this period, was not more than one-sixth. He improved in the same satisfactory manner all through the next month of June, the albumen becoming reduced to about a twelfth and sometimes a sixteenth. He now went out, and from the change in his color and his activity in running about, excited the astonishment of those neighbors who were wont to observe his heavy pale appearance as he was carried about; the convulsions and the coma having also damped all hope of recovery. Towards the end of June, he was taken by the nurse into the country, with directions to go on with the eggs and steel. When Mr. Yates last examined the urine, he found no trace of albumen, and there has been no relapse up till now, the 30th of June, 1860. This is one of the instances in which, I think, the favorable change can be referred with confidence to the treatment pursued. We can never know what was the precise condition of the kidneys when the diseased action was paramount, and may also never know the condition of the same

organs after death. So far, morbo-anatomically and pathologically, our suppositions must be mere theory; but that the albuminuria did exist, and was treated upon definite simple principles, and disappeared, are material facts of a manifold more importance to the practical physician than all the speculations in the world.

Case v. *Albuminuria preceded by Anœmia and Amenorrhœa, with apparent Recovery.* Miss E. R., aged 18, and residing in a healthy part of the county of Worcester, first appeared before me on the 9th of July, 1857. She had been ill for eighteen months before, and had ceased to menstruate during that time. She, like the others, was pale, puffy, and pasty in aspect, and was immensely swelled in the lower part of the body. The ankles were fifteen inches round, and the legs and thighs in proportion; the abdomen also was swollen, and even the labia greatly distended. She was drowsy and without appetite, especially disliking eggs and other animal food, and complained of headache, languor, and nausea. The urine was frequent and scanty, and of milky appearance. The mother stated that the gentleman she had lately been under had told her that her daughter was not suffering from common dropsy, but from what was called Bright's dropsy, from which he feared there was no possible recovery, but that she might try what could be done for her in Birmingham, and accordingly she was sent to me. Her urine was then fully six-eighths albumen, and she had some cough. She was first ordered the aloes and assafœtida pills at night, with a pectoral and diuretic mixture, and also the muriated iron in peptic liquor, and from four to six eggs a day, in one form or other, and as a medicine, without regard to her taste or inclination. This was insisted upon, not as a luxury, but a necessity, and she promised a rigid compliance. On July 20th the swelling had somewhat decreased, and she continued the treatment. By the 30th, the swellings were noted to be much less, and the color somewhat improved, the albumen being reduced to about three-fourths. She was less drowsy, and the bladder was less irritable.

On August 10th she had an attack of asthmatic bronchitis, for which she took æthereal tincture of lobelia, etc., and got better. The swellings now continued to decrease, and the color to improve steadily, so that by the 22d of October the anasarca was almost gone, the ankle measuring eight inches, while the albumen was only one-fourth of the urine passed. She now took two grains of sulphate of quinine, and the same of sulphate of iron, in pill thrice a day, and the peptic liquor as required, the diet being as before. In November she had a menstrual flux, and again in December, when there was no anasarca, and the color was very good, and the albumen only

one-sixth. She said she felt strong, and able to walk and work as well as ever she did in her life. She was advised, however, to continue the tonic treatment and diet. On the 18th of January, 1859, she reported that she felt perfectly well, again on the 18th of March, and also on June 13th, when there was only a mere trace of albumen, menstruation going on regularly, and every thing else being right. She has since visited me, in 1860, within two months back, remaining of good color, regularly menstruating, and feeling well; but she perseveres in taking the phosphate and carbonate of iron, and meat diet, etc.. On each occasion she looked well, and reported herself hearty, strong, and regular in all her bodily functions. On the last occasion, there was some mucus in the urine, but scarcely a trace of albumen, if any at all. Within the last few days, being called into the neighborhood where she lives, I heard her spoken of as being in what is called "rude health." Here, I think, we have an equal right to infer that the steady improvement that took place, was due to the steady treatment pursued. The utility of the substitutive principle, which I have heretofore strongly advocated, is, I apprehend, impossible of being controverted. It possesses, above all, the distinguishing characteristic of simplicity—a simplicity almost too simple for those who delight in startling novelties and far fetched speculations. But this is obvious that, whereas the bodily frame is formed of certain elements, or of compound radicals, acting after the manner of elements in their attractions, repulsions, and combinations, and whereas such bodily frame is impaired if one or more of such elements or compound radicals be not duly supplied, it follows, as a matter of necessity, that when they are found wanting or deficient they ought to be supplied, if possible. It may happen, in some cases, that the very organization itself is incapable of appropriating such pabulum after being furnished with it, but these are the exceptions, and not the rule, unless such organizations be worn out by protracted disease or old age. In the special matter of this albuminuria, as we see that in most cases the dreaded symptom seems to be preceded by hemorrhage or other sources of drainage of the red particles, and is, when it takes place, itself a drainage of the albumen, so an extra supply of steel and albumen appears the readiest method of meeting these evils, and the following deductions may therefore be advanced with safety:

1. When the premonitory symptoms of debility and anæmia have not as yet produced actual renal disorganization, the supplies of the deficient elements afford a fair hope of averting the threatened malady of albuminuria.

2. If the renal disorganization be commencing, the improve-

ment of the mass of the blood by such means may yet give the constitution the power of arresting the dire changes that may precede, accompany, or supervene upon the albuminuria.

3. Even if the disorganization be considerably advanced, such supplies may postpone the fatal issue for an indefinite period.

These cases of absolute and complete disorganization or disglanding are, of course, as already observed, beyond the scope of this or any other therapeutic paper, and belong exclusively to the province of morbid anatomy.

CORRESPONDENCE.

REPORT OF, AND REMARKS UPON, A CASE OF DIPHTHERIA.

By E. H. Luckett, Owensboro, Ky.

Our patient was a negro girl, æt 18 years, of strong muscular frame—had always been healthy; was attacked on Friday, the 24th day of August, with rigors and slight tingling sensations, with soreness of the throat.

On the 25th day of August Dr. Tyler was called to see her. At this time, she had slight fever, intense inflammation of the throat and fauces, the diseased parts presenting a shiny or glistening appearance. Dyspnœa and dysphagia intense; restlessness great, tossing from one position to another; ordered purgative dose of calomel, and Dover's powder in quieting doses; throat sponged with a solution of nit. argent.

On the morning of the 26th, all of the symptoms had increased; constant desire to change position; pulse feeble, 96; skin pleasant but dry; bowels moved moderately from calomel; ordered sat. sol. chlorate pot., and made incisions into the uvula and fauces, which relieved, to some extent, the dyspnœa; ordered inhalation from warm water, hops and vinegar poultices to the external parts, which had by this time become much swollen.

Evening visit—No better; throat in about the same condition, except that a whitish membrane had formed over the tonsils and fauces; ordered potash to be continued, brandy and good diet to be taken liberally; sol. argent nit. was applied to the whole of the diseased surface; gargles of muriatic acid

and honey were directed to clear the throat of the abundant secretion of ropy mucus which sorely distressed our patient.

August 27th.—Our patient was in no better condition, if anything worse off; pulse 104, feeble; stomach irritable; bowels constipated; skin pleasantly cool, but dry; difficulty in swallowing increased; external swelling increased—extended to thorax; discontinued chlorate of potash, and continued brandy, soup, and gargle.

August 28th.—Condition but slightly altered; membrane not so white—looks as though it was detaching. At this date the nares had become occluded by the formation of membrane, which could be observed through their external opening. This added much to the discomfort of our patient, compelling her to breathe through the mouth, drying the passages and increasing the difficulty of breathing and swallowing; re-applied argent, and brandy and soup continued.

August 29th.—Most of the membrane off or loose; swallowed with great difficulty; breathing somewhat easier; skin cool, dry; pulse 100; bowels not moved. At our evening visit we learned our patient had swallowed none since early morning; ordered injections, brandy, and soup, as she was greatly enfeebled.

August 30th.—General condition about the same; membrane gone from right side of throat, that on left side loose above but attached below, where it spreads over tonsils. The loose portion was detached with scissors and removed, it interfering with respiration, fitting as a valve over the small opening left, only where forced away by an expuration; swallowed none since last visit; treatment same. From this time on until our patient died, there was but little difference in her condition. Her bowels remained constipated until just before her demise; has swallowed nothing since the 29th of August, although the swelling both internal and external has greatly diminished. Her voice throughout her illness has been feeble (aphonic) never raising above a loud whisper, yet never shrill or croupal.

From the 30th day of August until the 5th of September, (when our patient departed), we could see that our patient was gradually sinking, notwithstanding the vigorous use of soup and brandy, injections, milk baths, and the application of grease to the skin. Morbid appearance of throat

fifteen hours after death; fauces slightly injected with its mucous membrane hanging to the deeper structures in shreds; pharynx greatly injected, presenting somewhat the appearance of parts about to become gangrenous; œsophagous healthy; tonsils were of a dark color, one having a small deep ulcer in it; epiglottis was greatly thickened—ulcerated—with mucous membrane softened, and loosely adherent; larynx and trachea inflamed, with their mucous membrane softened.

REMARKS.

The glassy appearance of the throat when first seen, created great suspicion in our minds as to the diphtheritic nature of the disease we were about to treat; but it was not until the third day that the characteristic membrane made its appearance, which, in the absence of an epidemic, is the only means of making an accurate diagnosis. The external swelling, although not constant as a part of this disease, is nearly always present in severe cases, notwithstanding a learned Louisville author advanced the doctrine here that diphtheria was never accompanied with external swelling. We advise our editorial friend to consult all of the standard books which discuss this disease, and then refer to late periodical publications in regard to its nature and symptoms, before *starting out on another diphtheritic pilgrimage.*

It is proper to remark that, throughout the disease, we were troubled more or less in making applications to the throat and diseased surfaces by our patient resisting every attempt to do so. Again, she would become more tractable and yielding, and allow the caustic, either solid or in solution, to be applied, followed in the interval by weaker gargles of clor. soda, mur. acid, etc.

As the case advanced, the dysphagia, from being very difficult, became complete, and we had to resort to enemas containing nourishment and brandy every few hours, along, and in connection with rubbing the surface of the body frequently with cod-liver oil, lard, and baths of milk. The inadequacy of these substances to sustain life became more and more apparent, and, as a dernier resort, we attempted the use of the stomach tube; but here we were again foiled, the patient making the most violent resistance. Indeed we soon learned that the attempt would be useless unless we could get our patient's

consent, or resort to anæsthesia. The first we could not obtain, and were deterred from resorting to the other by the weakness of our patient, and the free secretions which were pouring from the diseased parts. It might have been better to have resorted to it, but it seemed to us otherwise. I had forgotten to mention that every attempt at swallowing was attended with a sense of suffocation and regurgitation of the fluid. These symptoms led us to infer inflammation, thickening, and probably ulceration of the epiglottis, and its consequent inability to close the chink of the glottis, which was fully corroborated by the post mortem appearance of the diseased organs.

DIPHTHERIA.

By Stanton P. Bryan, M. D., Brownsboro, Ky.

Within the twelve months ending the 15th of September, ult., *fifty-five* cases of this formidable disease occurred in my practice. It may not, therefore, be amiss for me to contribute my mite to the general fund of information, especially as such a singular contrariety of opinions exist in the various published "reports," as to the indications to be fulfilled in this disease, and as to the best and most efficient means to be employed for the fulfillment of the several indications. But as so much has already been written upon this affection, of late, it would be a work of supererogation should I enter into a lengthy description of the history and pathology of the disease, or even to detail the symptoms and treatment of individual cases. I will, therefore, restrict the few remarks which I have to offer at present, to a brief consideration of diphtheria in its general aspect, with more particular reference to it in a practical point of view.

Usually the disease was ushered in by headache, pains and stiffness in the joints, and a feeling of soreness in the bones and muscles, the patients complaining as if they had been beaten; occasionally there were chilly sensations along the spine, and more rarely there was a decided rigor. These symptoms were generally succeeded in a day or two—sometimes in a few hours—by "sore throat," which was a prominent symptom in all cases. The appearances in the throat

varied greatly in the different cases; in some there was a bright scarlet discoloration, in others crimson, and in still another class there was a darker purple hue; and in these latter there were lived spots like ecchymosis beneath the integument of the throat and cheeks. In almost all instances there was more or less enlargement of the tonsils and uvula, and sometimes the former were so much swollen as to touch each other, pressing the pendulum palati forward into the mouth, and greatly embarrassing the functions of respiration and deglutition. In some the tonsils, uvula, &c., were ulcerated, and covered with dark sanies, which was exceedingly offensive.

In *thirty-nine* of the cases the pseudo-membrane was distinctly visible, varying from a few small patches, or a mere whitish film, to an extensive coating of yellow or greyish membrane, of a line or more in thickness, covering the larynx, pharynx, tonsils, uvula, velum, palate, and sometimes lining the cheeks, lips, hard palate, and nares, and of sufficient consistency to bear maceration in water for several days, and afterwards capable of being preserved for an indefinite time in alcohol.

In the remaining *sixteen* cases the false membrane was not visible, although they appeared in every other respect to resemble the others. There was distinct febrile action of greater or less intensity, usually of a remitting or intermitting type, in *forty-six* cases, accompanied by headache, pains in the back and limbs, loss of appetite, furred tongue, and in some instances great prostration of strength; but in the other *nine* cases there was no appreciable fever—the tongue was clean, and the appetite remained unimpaired. In four cases there was a scarlet rash, confined to the hands, arms, and feet, together with a general duskiness of the surface like that seen in severe cases of scarlatina with suppressed eruption; but in these latter, as in all the other cases, there were no desquamation of the cuticle, anasarca, &c., following as sequels of the disease. In *twenty-two* cases there was considerable enlargement of the cervical and sub-maxillary glands; and in *two* there was a large abscess, beginning in the sulcus below the left ear and extending on the cheek and behind the ear, covering the mastoid portion of the temporal bone, and appar-

ently involving the parotid gland. These abscesses were broad, flat, and hard, resembling carbuncles. One of them healed kindly after being opened, but the other threw off a large slough, and left a broad, deep, indolent ulcer, laying bare the mastoid process, which was several weeks in healing. Delirium was a frequeut, and convulsions an occasional, complication of the severe cases. One patient had two attacks of the disease, with an interval of eleven months, the first a medium and the second a very severe attack.

The treatment which I have found uniformly successful in the management of the above mentioned fifty-five cases of diphtheria—with a *single* exception—may be succinctly stated as follows: My first prescription, in all cases, was a solution of nitrate of silver—20 grains to the ounce—with which the throat was to be thoroughly mopped three, four, or five times a day; and this operation, when properly performed, was usually followed by a copious expectoration of viscid mucus, mixed with shreds of membrane, and sometimes tinged with blood, very much resembling the sputa of pneumonia. About half an hour after each mopping, the patient, if an adult, was required to gargle the throat well with a watery solution of chlorate of potash—℥ij iv to Oj—and immediately afterwards to swallow from f℥ss to f℥j of the same solution; but if a child, and could not be made to gargle the throat, I was contented with giving the solution internally. If the bowels were constipated—for diarrhœa was present in some—mild aperients, such as castor oil and spirits of turpentine, were given *pro re nata*. In twenty-five of the milder cases, this is all the treatment that was employed. While in the remaining thirty cases—being more severe, and many of them truly alarming—in addition to the above, sulphate of quinine in large doses, from ℈j to ℥ss in 24 hours, was given to adults, and about the same proportion to children; not so much, however, for its *sustaining* as for its *controlling* effects, for it appeared to control the fever, and to arrest the progress of the disease in all instances, except the single fatal case before referred to, in from two to five days. Occasionally the fever returned after the quinine had been discontinued for a few days, with a corresponding aggravation of the local symptoms when I resumed the use of the medicine, and always with the same happy

effect which followed its first administration. But in no instances did my patients relapse into a typhoid condition, nor was there slow and protracted convalescence in any, except the one which had the huge post-aural ulcer, and even in this one the peculiar symptoms of the disease had subsided, and the patient appeared otherwise quite well, long before the ulcer healed. It was as remarkable as it was interesting and satisfactory, to witness the patient passing in a few days from a state of the utmost suffering, prostration, and peril, into a condition of comparative ease and safety, and regaining the strength most rapidly. And these facts I deem of great significance, as there have been so many typhoid and chronic cases of diphtheria recorded. A single attack, in a child of three years, was succeeded by paralysis, which was confined to the right side of the face, tongue, &c., and required no special treatment for its removal. Aphonia, more or less complete, was present in five cases, all of which recovered the voice soon after the subsidence of the local symptoms. It appeared to me that the quinine exerted, in these cases, a curative influence not inferior to that which it exerts in ordinary malarious fevers; the pulse, which before was small, feeble, and rapid, numbering in some instances from 120 to 140 beats per minute, speedily became, under its benign influence, fuller, stronger, and slower, just as we often see in congestive fever. To four cases only did I deem it necessary to administer alcoholic stimulants, and one of those was the fatal case. To three the chlorinated tincture of iron was given, in addition to the quinine, &c., as the patient appeared quite anemic. Sometimes, though rarely, a counter-irritant was applied to the throat; and for this purpose the spirits of turpentine was employed, usually diluted with an equal quantity of olive oil. To seven patients I gave at the commencement of the treatment, a small laxative dose of calomel, but it was not deemed expedient to repeat it, and the use of drastic cathartics, in all cases, was particularly interdicted. To two patients an emetic of hive-sirup was given for the purpose of dislodging loose membrane, with a most happy effect, when suffocation seemed almost inevitable; but, in view of the general prostration which attends the disease, it was not deemed advisable or safe to employ emetics indiscriminately, and never, except to meet some special indication like the one

just mentioned. The use of the nitrate of silver was generally continued for several days after all other remedial agents were discontinued, and until the inflammation had mainly subsided, and the ulcerations were nearly or quite healed. In all cases I directed generous diet and abundance of fresh air; and allowed cooling drinks, such as ice-water, ice-lemonade, &c., *ad libitum*, to all those who desired them. But whatever adjunctive means were employed, the quinine was confidently relied upon as the sheet-anchor in the management of all the severer cases.

From a most careful observation of the foregoing cases, extending through a period of twelve months, and scattered promiscuously over a densely populated district of country ten miles square, I have been unable to satisfy myself that diphtheria is a contagious disease.

To recapitulate, I will state as the result of my experience and observation:

1. That diphtheria is not a self-limited disease, in the light in which we so regard measles, variola, and typhoid fever, but that its duration may be materially abridged, as well as its violence greatly mitigated, by prompt and proper treatment.

2. That the milder cases of diphtheria require no other treatment than the local application of nitrate of silver, in solution, and the internal use of chlorate of potash, together with generous diet and the cautious use of such mild aperient medicines as will maintain a soluble condition of the bowels, while the more severe cases may generally be very promptly controlled, if the treatment is early commenced, by the addition of quinine, and occasionally of brandy and iron to the foregoing.

3. That depletion in this disease, whether direct by blood-letting, or indirect by purgation, &c., is not only a valueless expedient, but in consequence of its debilitating effects, is positively injurious, by favoring the accession of typhoid symptoms and preventing a rapid and satisfactory convalescence.

October 1, 1860.

NEW PUBLICATIONS.

Churchill's System of Midwifery, with Additions by D. Francis Condie, M. D.

The edition of the work now offered to the profession contains nearly double the qnantity of matter which was comprised in the former editions. The author is well and favorably known, and we are happy to perceive that the editor has corrected some physiological errors with which the author seems to have been content.

Indeed, if the author had limited himself to practical midwifery (and we must confess that he has in the main done so) it would, perhaps, have been better for the reader. Dr. Condie, however, protects him from accepting obsolete views, or mere speculations as physiological truths, so that appearing as the work now does, with his additions, we look upon it, not as one of the best, but as the best work on midwifery which we possess, and its appearance relieves us from a dilemma in which we have lately been frequently placed by those who have asked what work on midwifery we would advise them to purchase. We will unhesitatingly recommend them now, to avail themselves of Churchill's last edition. We would also respectfully, and with due deference, suggest to the Scott County Medical Society, and their friends, the propriety of purchasing a copy, and framing the 528th paragraph so that it may be displayed in their meeting house as a commentary upon "an impossibility in fact." Some portions of this work we may have occasion to comment upon, and commend particularly, at a future time.

Walshe on Diseases of the Lungs.

When new editions of a work are demanded by the medical profession, the presumption is warranted that this demand arises from the intrinsic merits of the work. In such cases it is not necessary to review them, further than to ascertain whether they have kept pace with advancing science. Nor is even as much as this demanded for works essentially practical, written as it were at the bed-side, and being, therefore, more a report of cases and what you positively see and know than what you surmise or theorise upon.

Such as are of this kind, are those which tend to improve our practical knowledge and conversance with the details of a sick-room, from whence we may proceed, if we will, to philosophize upon the pathological or therapeutical phenomena incident to our observance. As regards the diseases of which the work before us treats it is unnecessary to urge their importance or frequency, and no educated physician of the present day will require to be urged to avail himself of every possible means which will familiarize him with their stndy. There may still be some old fogies who lazily and ignorantly smile incredulously when they hear of our present means of diagnosticating accurately many of these diseases, and doubtless, also, there are many physically unable to avail themselves of these means. All ears are not musical ears, but he will show great length of his own who denies the power of others to detect discord. As well might a blind man assert that no one could distinguish colors.

The absolute necessity of knowledge being admitted, our duty is to seek that knowledge through the most accessible and remunerating channels. No one can peruse the work of Dr. Walshe without profit, but he will do so much more understandingly if he will first devote a few hours to the study of acoustics. It is replete with information graphically written, and although not put forth in the best style of the publishers, (Blanchard & Lea), is nevertheless well executed. It should be in the library of every practitioner who cares to keep pace with the progress of his profession.

Ashton on Diseases of the Rectum.

Probably within the whole range of surgical diseases, none are more annoying to patient and attendant, than those which involve the rectum or anus. A false and fatuitous delicacy secretes them from examination, and hence, at times a disease which abstractedly is of little moment, and might be permanently relieved by very simple means, becomes secondarily of great importance, inducing a chain of serious phenomena and excrutiating pain, involving different organs in sad and fatal sympathy, exciting an irritability of temper or a mental depression which stops not at misanthropy, but urges the victim on to self-destruction or to lunacy.

We draw not upon our imagination for this picture. There sit two images in memory who conjure up the truths which we have penned, and whose separate histories, if they were written here, would form the types from which a thousand volumes might be printed. Strange as it may at first blush seem, there yet exists between diseases involving these parts, but more especially the genital organs and the mind, so close a sympathy that very few, if any, can resist their impressions. How important it is, then, to acquaint ourselves intimately with the symptoms by which they may be recognized, the phenomena which attend them, the consequences which are entailed by neglect, and the most effectual means of cure. The work before us is essentially practical; the style of its composition is graceful and pleasing. It has already been approved by the profession, and we hail with satisfaction the advent of the present edition. This work is also published by Messrs. Blanchard & Lea, to whom the medical public are so much indebted.

Winslow on the Brain and Mind.

We will not venture upon an expression of opinion in regard to the merits of this work. We anticipate great profit and pleasure from a careful perusal of it, and hope soon to give it the attention which the subject and status of the author are entitled to.

The Anatomy and Physiology of the Horse. By George H. Dadd, M. D., V. S.

We have received, through the kindness of the author, a copy of this excellent work, which we will review with pleasure in our next number.

Elwood's Jurisprudence, &c.

A review of this work was promised for our present number by a gentleman in whose hands we placed it for that purpose, feeling that he was more competent to do justice to the author than we would be, and hence his opinions would in our judgment be entitled to more weight with our readers than our own. But he has not yet furnished us with his views. We hope to notice the book in our next.

Druitt's System of Modern Surgery.

A review of this standard work would be supererogatory. It will be sufficient to announce that a new edition has just been issued. Of the style in which this issue appears we only deem it necessary to say that Blanchard & Lea are the publishers. This work cannot be two highly commended to students and practitioners. It is one of the most valuable text books recommended by the University, as well as many other medical institutions. The reader will, therefore, only require to be informed of the points of difference between this edition and the seven which have preceded it.

To this end we insert an extract from the author's preface, which contains what we might express less briefly, and we have only to add our testimony to the greatly enhanced value of the work as it now appears, and say to those who esteem our counsel—buy and read it:

"In the chapter on inflammation, which is entirely new, I have endeavored to present the facts in a modern practical guise, stripped of the formal old Hunterian phraseology. Pyæmia and phlegmasia dolens are removed from the chapter on the veins, and are treated of in their natural alliance with erysipelas and diffused inflammation. Due notice has been taken of the use and abuse of caustics in the treatment of cancer. The arrangement of the chapters on injuries has been altered, so as to give due prominence to the comparative safety of sub-cutaneous injuries. The whole chapter on gun shot wounds has been written afresh and very much enlarged, from materials kindly placed at my disposal by Mr. George Lawson. The chapter on the eye has again been most kindly revised by Mr. Haynes Walton, whom I have, besides, to thank for the materials for a section on the ophthalmoscope. The treatment of anchylosis by forcible extension; and of syphilis by fumigation; the recent improvements in ovariotomy, and in the treatment of vesico-vaginal fistula; the radical cure of hernia; and the subject of chloroform, and the too frequent deadly results of its administration, may be mentioned as having received special addition or improvement; whilst in the last chapter, I have taken pains to bring into small compass the latest and best information on excision of the knee-joint. It will, indeed, be a reproach to surgeons, if this humane and rational operation shall be discontinued on the plea of want of success or large mortality resulting."

The publishers state that "the work now contains one-third

more matter and nearly 250 more illustrations than when last presented to the American profession." The notes of the former editors, Drs. Flint and Sargent, have been embodied in the author's revision, and the additions by the present editor.

Pharmaceutical Department.

By THOS. E. JENKINS, Pharmaceutist.

Veratrum Viride, in the Inflammation of the Lungs.—In the report from the Lebanon County Medical Society, made in the State Medical Society of Pennsylvania (1859), Dr. B. F. Schenck states that from November, 1858, to May, 1859, he had attended a larger number of cases of inflammation of the lungs and air-passages, than he ever before had done within the same number of months.

He treated, he remarks, one hundred and seven cases, within the above period—ninety-eight were of pneumonia and bronchitis, occurring almost exclusively in children, seven of croup, and two of pleurisy. They were, in general, very manageable; this he imputes to his having made use, almost invariably, after venesection, when this was required, of the veratrum viride. From an extensive experience of the curative effects of the veratrum in all inflammatory affections, he regards it as a valuable addition to the materia medica. He warns us, however, that its use requires judgment and caution. At first Dr. S. employed Norwood's tincture, as procured from the druggists; having, however, obtained a very good sample of the root, he prepared the tincture himself, and found this possessed of greater activity—he was often, indeed, startled by the violent effects it produced when given in the usual doses. From half a drop to a drop, given to an infant of from six to twelve months, controlled a pulse of 130–160, as if by magic. Adults were sometimes violently affected by five or six drops, every six hours. Dr. S. has found that the most alarming symptoms which result from the administration of the veratrum are readily removed by the application of a sinapism over the stomach, and internal stimulation by means of brandy.

For children, the favorite formula of Dr. S. is, ℞—Syr. ipecac. *vel.* syr. scillæ comp. f℥ss; sp. ether. nitrici. f℥ss; tr. verat. virid. gtt. xv.–xxv.—M. The dose being from 15–30 drops, every three hours according to the age of the patient. Dr.

S's invariable rule is to caution the attendants never to give the sirup as an emetic. Two teaspoonsful of it were given in mistake within an hour, to an infant ten months old, threatened with suffocation, in the course of an attack of pneumonia. Sudden prostration ensued, and, in the midst of violent retchings and vomiting, the child died. Although this painful occurrence has given to Dr. S. a lively sense of the danger attendant upon the incautious use of the veratrum viride, he is still convinced that, in judicious and intelligent hands, it is one of our most potent antiphlogistic remedies.

Whitewash.—Whitewash is one of the most valuable articles in the world, when properly applied. It prevents not only the decay of wood, but conduces greatly to the healthiness of all buildings, whether of wood or stone. Outbuildings and fences, when not painted, should be supplied once or twice every year with a good coat of whitewash, which should be prepared in the following way: Take a clean water-tight barrel or other suitable cask, and put into it half a bushel of lime. Slack it by pouring water over it, boiling hot, and in sufficient quantity to cover it five inches deep, and stir it briskly till thoroughly slaked. When the slaking has been effected, dissolve it in water, and add two pounds of sulphate of zinc, and one of common salt. These will cause the wash to harden, and prevent its cracking, which gives an unseemly appearance to the work. If desirable, a beautiful cream color may be communicated to the above wash, by adding three pounds of yellow ohcre; or a good pearl or lead color, by the addition of lamp, vine or ivory black. For fawn color, add four pounds umber—Turkish or American (the latter is the cheapest)—one pound Indian red and one pound common lampblack. For common stone color, add four pounds raw umber, and two pounds lampblack.

This wash may be applied with a common whitewash brush and will be found much superior both in appearance and durability, to common whitewash.

Oxygen an Antidote for Ether and Chloroform.—Though not coming strictly under the denomination of organic chemistry, we may as well notice here the experiments of M. Ozanam on the use of oxygen as an antidote to ether and chloroform. In all the experiments M. Ozanam found that the animals awoke in half the time after inhaling oxygen than they did with simple atmospheric air. The result was just the same whether ether or chloroform had been used. Several animals were placed under the influence of chloroform until

the beating of the heart was imperceptible and death iminent, but on inhaling oxygen they quickly awoke. In one experiment the animal respired at the same time the vapor of ether and pure oxygen. It was twelve minutes before the animal slept, and then the sleep was so light that it awoke in a minute and a half, without the continuation of the oxygen. When chloroform and oxygen were breathed together, the animal became drowsy after eight minutes, but did not sleep, and after the inhalations were stopped perfectly recovered in a few seconds. M. Ozanam believes that so long as respiration has not entirely ceased, the revivifying effects of oxygen will be produced, and recommends that the surgeon should always have at his command a supply of oxygen, to reanimate his patient in case of accident.—*Comptes Rendus.*

A Hindoo Empiric.—A distinguished clergyman recently related to us the following: Sojourning for a time in an inland town on the Ganges, he observed that a man daily passed his verandah, followed by a number of retainers—a mark of distinction. On inquiry, he learned that he was a doctor. Being himself quite intelligent on medical subjects, our informant had the curiosity to inqnire into the medical faith of the Hindoo doctor, and soon discovered that he was a man of a good deal of pretension.

"Why," said he, "I am astonished at the ignorance of doctors around me here, who allow their patients to die."

"Do you always cure your patients?"

"Always! I have made diseases and their remedies the study of my life, and I always cure my cases."

"Then you must have systematized the practice of medicine, and your knowledge and experience are worth detailing."

"To be sure. I find that there are just sixty diseases to which mankind are liable, and as I have discovered a remedy for each disease, I never fail to cure my patients."

Not long after this conversation, the voices of a large number of wailing women announced the fact that a person of considerable note in the town had died. Our informant, meeting his friend the doctor, remarked to him—

"Judging from the number of mourners, a man of considerable note died last night."

"Yes, he was a prominent man in our town."

"Who was his physician?"

"I was!"

"Why, how is this? I thought you always cured your patients!"

"And so I do of diseases; but that was not disease, that was death, sir. There is no cure for death!"

At a recent discussion before the Society of Arts in London, on the detection of arsenical poisoning, Dr. Lethby traced the progress of toxicological research from the trial of Donald, in 1815, up to the present time. A little while before that period *ten grains* of arsenic were required to make a metalic test satisfactory in a court of law. Afterwards, Dr. Black improved the process till he could detect the poison if he had *one grain* to operate upon. It was then thought a marvel of toxicological skill when Dr. Christison said he only required the 16th of a grain; but now we can trace the presence of the 250,000,000th of a grain of arsenic! It is to be feared that the detection of this particular poison has reached an almost dangerous degree of delicacy, and extreme caution is necessary in examinations for its criminal administration. We live surrounded by means of unconsciously absorbing traces of arsenic; we breathe arsenicated dust from the green wall papers of our rooms, the confectioners supply it wholesale in their cake ornaments and sweetmeats; the very drugs prescribed for our relief are tainted with arsenic; nay, more, even our vegetable food, as Prof. Davy has lately pointed out, may be contaminated with arsenic; and there is probably no drinking water containing iron without a trace of arsenic as well. The poison may thus be stored up in the system till, in the course of years, the amount becomes appreciable.

A French paper tells us that the *savans* of Paris are experimenting on the tenacity of life commonly attributed to toads by inclosing several specimens in plaster of Paris, where they will be kept for a series of years. The toads might say to the *savans* as the frogs in the fable said to the boys: "Though fun for you it is death for us."

Scrofula.—Dr. Gregory, of Edinburgh, asserted as his belief that there was not a single family in Great Britain in which scrofula did not exist.

Homœopathy.—Like cures like. Sulphur comes from Vesuvius. Therefore it is good for eruptions.—*Punch.*

Editorial Department.

DOCTOR SOLLUM.

Since the publication of our article on Professor Gasbomb we have been flooded by inquiries as to who we meant, who had sat for the picture, who we had in our eye, &c., and in anticipation of like inquisitiveness now we tell you in advance that we mean—but no, perhaps it would be better to allow you to appropriate that portion of the suit which fits your person, and leave the rest to the rag pickers.

Doctor Sollum was born at a time when his mother was in much distress. She had just been at a congregational sewing society, but returned in time to be present at his denouement. Mrs. Greenland, Mrs. Icy, and Mrs. Mountains, who were present, concur in the opinion that the placidity of his first smile, and the humility of his first tear, were full of prophetic promise. And Mrs. Coralsands, his nurse, declares that, from his earliest infancy he was never known to commit a breach of propriety. Mrs. Sollum had been educated by her grandmama, a strict disciplinarian, full of faith and good works, a rigid economist of time and money, who now, good soul, is receiving her own with usury.

Under such happy auspices Mrs. Sollum gradually grew older and imperceptibly became a woman. Mr. Sollum was a hard working, honest, innocent man, well-to-do in life, with a little to spare for a rainy day, as he was wont to express himself. He was a true philosopher, and contended that charity began at home—that the Lord did not call upon people to lend to Him by giving to the poor that which did not belong to them. And expressed many other seemingly correct views of the same order, but which are now considered entirely heterodox.

After due course of preparation these two were wedlocked and lived together for a time as people so locked ought to live.

It was, however, soon perceived that the wife exerted a taliswomanic influence over the husband; his cheerful eye became downcast; his determined step erring and undecided; his happy smile forced and languid; his merry laugh bitter and sardonic; his friendly welcome, mute; his warmest friends barred out by missionaries; the provision for a rainy day gone to Africa; the wife's affections not diverted from earth, but from him, and centering with such focal power upon a Christian brother as to mark her offspring with a suspicious resemblance to the pastor (such are some of the strange influences of the mother's mind upon the child in utero); his credit destroyed and finally himself an inmate of a debtor's prison, where he died. Mrs. Sollum having learned to love matrimonial life, soon married the gentleman to whom her son bore such a striking resemblance. It seemed as if Providence had shaped their ends for mutual adaptation, and each in the other found a spiritual affinity.

Under such auspices did Dr. Sollum commence to pat the juba of life, but a cunning leer in his left eye soon indicated that the cowlick on his right temple, and the mole on his cheek, which he and his stepfather held in common, were to his mind coincidences outside of the general application of such a term. We cannot wonder, therefore, at many traits of character subsequently developed, and while we propose to hold them up to view, our object is merely to do so that they may be gently covered by a veil of charity in the recollection of his early history.

We pass by the dullness and stupidity of his school-boyhood in order to arrive at the period at which he becomes of professional interest to us. Being a preacher's wife's son, it seemed proper in the eyes of several parishioners that he should receive a professional education, but Mr. Sligh did not wish to diminish the mission fund, or withhold from the poor negro, and bestow upon the white son, the Lord's property, and the case was very strongly put to Mrs. Godlee, a most estimable and pious woman, who prayed daily that she might have more of that heavenly grace, charity; that she might not be disturbed by doubts of her pastor's piety, and such like. She conferred with Mrs. McSniffly, who had interesting daughters ripening into interesting ages, and a cousin who was a

learned professor in a medical college. This good lady suggested that if Mr. Sligh required her counsel it was at least worth asking for, and he could get it from first hands if he wanted it; but Mr. Sligh did not like Emily, and Mr. Sollum did; and if people wanted to know why he didn't like Emily, perhaps she could tell them; but she had said as much as she meant to, only that she could tell Mr. Sollum something for his good, and would do it; but Mr. Sligh was no friend of her's, and he hadn't that leer in his eye for nothing. Now the means of doing good for Mr. Sollum, to which Mrs. McSniffly alluded, were indicated in a little book with a picture on the back, which was every year distributed by this school, and which informed the sons of ministers that they might attend lectures for nothing. Without further circumlocution then, on our part, but with much on his, he arrived at their knowledge of this fact, and very soon his valise was packed with all his earthly possessions, including a fine tooth comb, a second-hand tooth brush, a pocket looking-glass, and a hair scraper. Thus equipped, our hero soon found himself in the city of medical lore. Before he left the boat a deputation of students had waited upon him, and proclaimed the high character of the school which he was to enter; assuring him of its increasing popularity; its advantages over every other school under heaven; the caution necessary to be practiced, lest he might be led astray after strange gods; the intense joy which the faculty would feel on receiving him, and the exquisite delight with which they would show him the kingdoms of medical science, and the glory of them; provided, only, he would be sure to bring his grist to their mill. Thus he entered upon an acquaintauce with the millers, who soon enveloped him in tobacco smoke and whisky fumes, from the influence of which he awoke to find that he had been fully initiated.

As time progressed and hopes of graduation brightened, he deemed it important to evince his gratitude to his prospective Alma Mater by selling himself, Faustus like, body and soul, to her requirements. Hence, in violation of a city ordinance which demanded that runners and porters should wear a badge designating their number aad occupation, he might be heard at most hours of the day or night, like a cock-pheasant in season, drumming, drumming, drumming. Thus he estab-

lished claims upon the faculty which were not to be, and could not be, ignored. It mattered not, therefore, when the learned professor of obstetrics asked him what course he would pursue in a case ot protracted labor when the head was at the inferior strait, that he had answered, "I would introdnce the speculum." It was of little moment that he had told the professor of Materia Medica that the dose of bichloride of mercury was from 5 to 20 grains, which might be repeated every few hours. It was of no practical importance that he had told the professor of anatomy that 6 or 7 muscles arose from the os uteri. These were feathers when weighed in the balance with the mighty efforts he had rendered in aid of the school, and so he passed as all other applicants did and received his sheepskin, which, however, was not large enough to hide the true character of the individual, for the protruding ears would indicate this on all occasions where true tests were applied.

We next find him at a little town situated on a beatiful bank of the sweetly flowing Gilflower, whither his mother's husband had been called by a demand for more moral light. Here he resumed the assumed habits of his earlier life, but the leer in his left eye had not left him. It remained as an indication of the old Adam remaining still, besides which Mrs. McSniffly yet lived, and she was an encyclopedia not to be opened. Dr. Sollum had now to act in his character of full grown man; he had eschewed diapers and pinafores, and wore a straight bodied coat and upstanding collar, and white cravat. When he did not wish to see an object particularly, he used spectacles, for they gave him an air of age and dignity, and inquisitiveness, which he did not otherwise possess, but they obscured his vision and so he only used them when this effect was of secondary importance. His shingle was unpretentious; a plain white board, 22x24 inches, lettered black and faintly shaded with yellow and green. His card was also unostentatious:

"SLEEK SOLLUM, MD.,
PHYSICIAN AND ACCOUCHEUR, SURGEON AND DENTIST,
Graduate of the Swiftsure College of Medicine and Surgery,
Member of the Physiosnoscospography Society.

☞Office—Adjoining the Presbyterian Church, where he may be found at all hours, when not engaged at other places. Professional secrets inviolable.

☞The poor attended gratuitously on payment for medicines. Special attention given to Diseases of the Eye and Ear—Squinting, Rupture, Dropsy, and all other Chronic Diseases, will receive particular attention.

N. B.—Dr. S. may be found on Sundays at the Library of the Church. He respectfully solicits your patronage.

REFERENCES—The various Professors of Swiftsure College, the Rev. Mr. Faithful, Rev. Mr. Alwright, and brothers Gentle, O'Lord, and Camm."

In this pleasant little village lived also a thoroughly educated and high toned gentleman, of sound judgment and great practical skill, who unfortunately fell into many gross errors of faith, and consequently was denied the privilege of purging the elect. He had foolishly intimated that the card of his professional brother was as long as brother O'Lord's countenance at camp-meeting, and that it was as pregnant with duplicity as brother Gentle was with hypocrisy. These and similar expressions, coupled with an air of independence justified by his true merits, raised the ire of the Solons of the village, who once in open meeting, at the suggestion of Dr. Sollum, called upon the Lord to enlighten his understanding, remove the veil of infidelity from before his eyes, and lead him by the still waters upon which their own crafts were floating pleasantly. Dr. Sollum desired to evince his forgiving and Christian disposition by thus blessing his enemies, and praying for such as despitefully used and persecuted him. Dr. Noble, however, in his darkness, viewed the matter in a different light, and hurled back the implication of infidelity as a base aspersion, and scorned their prayers as those of hypocrites and Pharisees. He sought to hold Sollum to a personal accountability, but those who, under the guise of religion, falsify and attack their superiors, readily skulk with their coward carcasses behind the rock, whose shadow they are unworthy to reach, and of whose waters they have never tasted. There is a beauty and preservative holiness in true religion which render a man impregnable, because he is by this divine influence withheld from making surreptitious assaults and moral assassinations, but to assume to have is one thing, and to possess another.

Dr. Noble had no alternative but to abide his time in the consciousness of his own rectitude; this he maintained, deeming it right to resent an insult, while he was willing to forgive an injury. Soon an event occurred which startled some of the sleepers in this quiet village. Mrs. Camm had been for

sometime in daily expectation of having her equanimity disturbed, and Dr. Sollum was on the alert waiting for the troubling of the waters. One dismal night, when Boreas and Jove were vieing in their efforts to outdo each other, a little cry betokened that another mortal was to run its course on earth. Thankful hearts and happy voices attuned their chords in grateful harmony. But the song of thanksgiving soon gave place to the plaintive wail of woe. A deathly pallor and an icy coldness foreboded evil. Sollum had ascertained that another stranger had been arrested crosswise in its passage to this sinful world, and hemorrhage foretold a speedy dissolution. In this emergency he conjured the friends to prepare for the worst, and comforted Mr. Camm by a homily upon the wind as tempered to the shorn lamb. But Mrs. McSniffly argued that it was a Christian duty to avail ourselves of every means of cure within our reach, and that if we neglected these we were culpable in the sight of God and man; she had seen hundreds of women colder than ice after confinement, and she had known of four difficult cases of children crosswise where Dr. Noble was and no harm had come of it; for her part, she would send right away for Dr. Noble, if she was Mr. Camm, but of course he could do as he liked; it was none of her funeral. This sally was not to be withstood, and so equeries were dispatched in haste for Dr. Noble. The infidel entered with so easy and self-composed a grace that Mrs. O'Lord prayed almost audibly that the poor woman might be protected, in her dying moments, from his unwholesome influence. A speedy examination of the case, and a minute's side conversation with Sollum, brought this gentleman to the bedside, and in a moment afterward he had delivered the placenta. "Just as I expected," muttered Mrs. McSniffly *soto voce;* "you'll all find out something some of these days, I reckon." Having ordered a little Bourbon toddy, assured the patient and her friends that there was not a scintilla of danger in her case, he quickly took his hat, made his most graceful bow to Mrs. O'Lord, and retired. Now there was something in that bow which was not so forbidding, after all, and perhaps she had done Dr. Noble injustice. He was certainly a very handsome man, and appeared to respect her very highly. It was, at any rate, her duty to be charitable, and he

had never said anything against her; indeed, he had once said to a friend that he thought her very pretty. "Faith, hope, and charity," she continued, "but the greatest of these is charity." Dr. Sollum waited for prayer, and then retired to meditate upon the troubling of the waters he had witnessed, and take a little wine for his oft infirmities.

After he had gone there was some talking done. Mrs. O'Lord said but little—she seemed confused; but Mrs. McSniffly made a few remarks over the tea which had been prepared. What those remarks were we need not stop to inquire. Suffice it to say, that as even Mrs. O'Lord seemed indisposed to contradict her, she opened fire like a forty gun frigate with every port hole open.

For a time thereafter Dr. Sollum's obstetric practice was somewhat limited, but he had not compromised himself with his church brethren; on the contrary, he had grown in grace and had become a steward, or elder, or some such officer, at any rate his duty was to go from pew to pew on Sunday with a little black walnut box fastened on the end of a long black walnut handle, and afford you the opportunity of dropping in your Peter's pence. But there is a divinity that shapes our ends, rough hew them as we will; so too, is the way of the transgressor hard, and however wary we may be in sin, there is a little bird to tell of the matter, while we hear him not, neither do we see him in his vigils. Thus was it with Dr. Sollum, for although he seemed to glide along on the full tide of success for a time, yet his fame was not to endure except in infamy, and Providence seemed to have selected his favorite department as that in which his shame was to be reflected as his ignorance had been. The mark on the cheek and the leer in the left eye were to be transmitted, and with them a long dark mother's mark, which Mrs. McSniffly instantly recognized as a poor box.

"*Oh, tempora! Oh, mores!*" said this good soul one day, as innocently, with several sisters, she reviewed the village history of the past few years. "Time is a mighty engine—running the machinery of life and testing the strength of every part; here bending a bolt; there forcing a screw; now breaking a wheel; then bursting a cylinder. Well, well, it takes two odds to make an even, and yon can't make an even without

two odds. Now, there's Mrs. Noble, why, before her first husband, poor O'Lord, died, it was a good day's washing to get around her face, it was so long; but now she's as happy as a June bug; she don't drawl out her words on her charity as she used to, but when she speaks she always says something, and when she gives away a dime, the whole town don't know it as they used to. But it's all her husband's doings; he's none of your preaching doctors, but he says his prayers in his family and in his closet, and looks as if the Lord was pleased with him, and not as if he thought the Lord was mad all the time at him. I tell you when people get up off their knees with a face like a ten foot pole, and an under lip like my old apron, they can't have had a good time of it. Now, just think of that snake of a fellow, Dr. Sollum; why I saw a grasshopper once try to jump from his chin to his nose, and he couldn't do it, but fell into his mouth. But, as I said before, it takes two odds to make an even. That long mark of the poor box settled the business for him; but then, as we say of the small pox, he took it the natural way. *O, tempora! O, mores!*"

[Communicated.]

PROF. LUNSFORD P. YANDELL, JR.

We were much gratified in seeing the name of our friend, Dr. L. P. Yandell, Jr., enrolled among the Professors of the Memphis Medical College. That this appointment will add to the strength of the already able faculty of that institution we have no doubt. Dr. Yandell belongs to a family widely known and highly distinguished as accomplished practitioners and teachers of medicine, and, judging from an acquaintance of several years, we are confident that in strength and vigor of intellect, he will not be found to be inferior to either of his eminent kinsmen. Although he has not as yet been tried in the lecture room, we venture to predict his early and triumphant success as a teacher. The opportunities which he has enjoyed for accomplishing himself for his new position, and especially for the department to which he has been elected, have been most liberal and abundant. During several years he was in the midst of the most extensive facilities for clinical study, surrounded by patients of every description, wit-

nessing the dispensing of remedies and watching their therapeutic effects, and thus he can not fail to have become thoroughly indoctrinated on everything pertaining to his department, and fully prepared for the *practical* teaching of the Materia Medica. We congratulate Dr. Yandell upon thus early entering upon a career in which he is destined, we are confident, to attain distinguished honor.

We shall watch his course with interest, believing that he will add new laurels to those which have already placed his family name high among the most honored in our profession.

* * *

The design of Dr. Gibbs, as set forth in the following circular, is worthy of commendation and encouragement, and his known position justifies the expectation that he will in good faith and without favor carry out his plans. It is to be regretted that American Medical Literature has suffered most in the house of its friends, and too often first finds justice at the hands of foreign critics and reviewers. Indeed, lately we have had issued a pretended biography of leading distinguished physicians and surgeons, which seems to have ignored the existence of the very brightest lights that have adorned the medical profession of our own country, or of any other under heaven. Such pettifogging is deserving of the severest reprehension, and we are happy to have grounds for hope that these things will not continue to be without receiving their deserts:

CIRCULAR.

The undersigned proposes to issue a yearly volume with the following title—"Year Book of American Contributions to Medical Science and Literature."

It is designed that Part *First* of each volume, shall comprise an arranged and classified *Summary* of, and index to, all the important original papers found in the various Medical Journals of this country, for the year immediately preceding. Part *Second* will comprise a *Summary* of, and index to, all papers found in the published transactions of the National and the various State Medical Societies. Part *Third* will embrace *Reviews* of all medical books of American authorship, published during the year, with a *Summary* of all the novelties in opinion or practice therein. A copious index will complete the work. To the above plan and arrangement, such other

additions shall be made as time and circumstances may suggest. The first volume will be issued early in the year 1861.

For the preparation of our *Monthly Summary of American Medical Journalism*, for the *A. M. Monthly*, we have arranged for all the American Medical Journals (over thirty in number) and at least four of the best European. To facilitate our design, we request a *continuance* of the *exchange.*

American authors of medical works, and publishers of the same, are requested to send to our address a copy of their respective works and publications. Medical Societies that publish their transactions, will, we trust, be kind enough to send a copy of the same to our address. For this kindness of an exchange from Journal publishers, authors, book publishers, and Presidents of Societies, we shall be happy to reciprocate by an *exchange of publications.*

The importance of a work of the character as above, which shall comprise *all there is of interest* in the more than 30 Journals, medical books issued for the year, and the various society transactions, will be readily conceded by all. We can not prepare the work and publish it at a pecuniary loss, and hence the object of this Circular is to request that all physicians who would encourage the work, and become subscribers to the same, *would send us their names* AT ONCE—payment to be made only on the publication of the work. The work shall contain from 500 to 800 pages, to be substantially bound, and furnished at the very low price of *Three Dollars.* That we may know whether the work is to receive sufficient encouragement to justify its completion and publication, *we request that subscribers' names* MAY BE SENT IN IMMEDIATELY. As a special favor we request that our friends will not allow a day to pass before responding to this Circular.

If Journal publishers will take sufficient interest in this National Enterprise, to publish our Circular, we shall be happy to remunerate, should the enterprise more than pay expenses.

All Books, Journals, Published Transactions, and Names of Subscribers, should be directed to

O. C. GIBBS, M.D.,
Frewsburg, Chautauque County, N. Y.

COLLEGE CLINIC PRIZES.

At the beginning of the last session of the Medical Department of the University of Louisville, the Professor of Clinical Medicine offered two prizes of twenty-five dollars each, to be paid in money or books, or instruments, for the best notes taken by a member of the class, of the lectures on Clinical

Medicine and Clinical Surgery. Both prizes were awarded to Mr. Thomas H. Hoskins, of Louisville, and presented by the Dean, at the banquet on commencement night. A very admirable lecture of Prof. Palmer, contained in our September number, was from the note-book of Dr. Hoskins. We promise our readers others of like quality from the same source, as well as some lectures upon diseases of the skin, by Prof. Yandell. The prizes will be again offered in the coming session. The number of competitors will, we doubt not, be large, and the effect, both upon students and teacher, can but be salutary. *

[Communicated.]

PROF. B. J. RAPHAEL.

The numerous friends of the above named gentleman in this city, will be much pleased to learn that in the reorganization of the New York Medical College, he has been called to fill the chair of the Principles and Practice of Surgery. For many years Dr. Raphael labored here as a private teacher in the same department, and won for himself, both among students and the profession, the reputation of a graceful, fluent, pleasing speaker, and an operator of uncommon dexterity. The extended opportunities afforded him by his late residence in New York and his connection with some of the hospitals of that great metropolis, must have improved his points, both as a teacher and surgical manipulator.

D. W. Y.

[Communicated.]

"RIBES' MEMOIR."

Prof. J. W. Benson—*My Dear Sir:* The memoir of Dr. Ribes, the translation of which you have asked for publication, has never before, I believe, been rendered into English. In some investigations in which I was engaged last year, of anal fistula, I was struck with the different versions of Dr. Ribes' language, as quoted by different authors. Finding the memoir in the original text in the library of the University, I requested my pupil, Mr. Hoskins, to translate it for me; and also to look up and arrange alphabetically the opinions both of those

authors who coincided with, and differed from, the views of Dr. Ribes. During the progress of the labor, which was by no means inconsiderable, I seldom had occasion even to assist my indefatigable pupil, and whatever merit attaches to the work belongs to the pupil, not the master. Since this translation was made, Mr. Hoskins has received the degree of the doctorate, and has established himself, for the practice of his profession, in the city of Boston. If high moral worth, and extraordinary industry, united to rare scientific and scholastic acquirements, deserve success, Dr. Hoskins both deserves and will achieve it.

I am, very respectfully,

DAVID W. YANDELL.

We owe an explanation and apology to our cotemporary in Columbus, Ohio, who had a right to expect the change of courtesy which he was entitled to. His letter and the accompanying advertisement were misplaced, and not recovered in time to be of any service to him. We hope to be able to make practical amends at some future time.

We acknowledge our indebtedness to Messrs. Morton & Griswold, and Maxwell & Co., for books received from the publishers through them.

Doubtless there are many booksellers in our city who have excellent assortments of medical books, but we look in vain for their advertisements, and hence can not tell who they are or what they have.

Our thanks are due to Gale Brothers, of Chicago, Illinois, for their promptitude and kindness in forwarding a beautiful assortment of artificial eyes, that we might select one for a patient. They are not only among the best druggists and apothecaries in the United States, but are also reliable and clever gentlemen. Our friends in their vicinity will consult self interest by heeding our counsel when we advise them to send their orders to Gale Brothers, 202 Randolph street, Chicago.

PHSIOLOGY—ANCIENT AND MODERN.

Jacob, 1749, *B. C.*

And Jacob took him rods of green poplar, and of the hazel and chestnut tree; and pilled white strakes in them, and made the white appear which was in the rods.

And he set the rods which he had pilled before the flocks in the gutters in the watering troughs when the flocks came to drink, that they should conceive when they came to drink.

And the flocks conceived before the rods, and brought forth cattle ringstraked, speckled, and spotted.

And Jacob did separate the lambs, and set the faces of the flocks toward the ringstraked and all the brown in the flock of Laban; and he put his own flocks by themselves and put them not unto Laban's cattle.

And it came to pass whensoever the stronger cattle did conceive, that Jacob laid the rods before the eyes of the cattle in the gutters, that they might conceive among the rods.

But when the cattle were feeble, he put them not in; so the feeble were Laban's and the stronger Jacob's.

Draper, 1860, *A. D.*

That both parents are concerned in imparting characteristics to the child there can be no doubt; it is fully established where they are of different races, as white and black, or white and red; and equally in the case of animals, as in mules, produced by the mixture of different kinds. It is scarcely necessary to remark that this extends to the communication of more refined peculiarities, the resemblance of countenance, figure, gesture, and even mental qualities, family likenesses which we daily observe. These impressions are of a much more profound character than might at first be supposed, as is proved by the fact that the third generation will exhibit peculiarities belonging to its progenitors, though those peculiarities have not occurred in the second. Even after parturition is over there still remains impressed upon the female a definite change; this is illustrated by the well known case of a mare which had borne a colt by a quagga, her subsequent colts by horses being distinctly marked like the first; and in the human female cases are of common occurrence in which the offspring of a widow, who has been married the second time, resemble her first husband. Marriage produces in this respect a permanent change in the female, a constitutional impression not disappearing in any length of time, the influence of the first husband reappearing in the children of a subsequent contract.

UNIVERSITY OF LOUISVILLE.

The Medical Department of this honorable Institution opens under happy auspices. Representatives from California, Texas, Louisiana, Mississippi, Georgia, Alabama, Tennessee, Arkansas, Illinois, Indiana, Kentucky, &c., &c., are already here, and it is peculiarly gratifying to observe so many familiar faces in the lecture room. Several gentlemen who for a time wandered from their first love, and visised less favored cities, have returned repentant, and are determined to obliterate the stain of error by increased devotion and zeal. There are yet a few stragglers whose obstinacy prevents them from yielding to the dictates of judgment, and who constrain themselves to appear consistent at the expense of much valuable time and money. Such should remember that it is more noble to confess an

error than to persist in it. We have no doubt of having a much larger class than that of last year, and have not ever seen as intelligent a body of young gentlemen assembled in a lecture room as those who comprise the present class.

If any one should accuse us of too great partiality in these remarks, they will please visit the University and observe for themselves. And if they are curious in reference to the why and wherefore thereof, we can perhaps enlighten them upon the subject.

We would call the attention of our readers to the very excellent assortment of surgical and dental instruments, apparatuses, &c., &c., which may be seen at Siegel's, on Third street near the postoffice. Besides those which he manufactures, he has a variety of very superior imported articles which he offers at fair prices.

Poisoning by Cyanide of Potassium.—A man engaged in photography, age thirty-six, took a draught prepared by himself on the 18th of December, 1858. After taking the fluid, he suddenly died. At the post-mortem, the external surface of the body was blanched; the death ecchymoses were well marked; the blood everywhere in the body was dark and fluid; the brain and lungs were hyperæmic. The mucous membrane of the stomach and intestines exhibited throughout no unusual appearance (*keinen regelwidrigen Zustand*). There were submitted for analysis one white medicine-glass, containing a colorless fluid, and two other glass vessels containing the intestines. The fluid No. 1 showed evidence of potassa and of hydrocyanic acid. The contents of the stomach consisted of a grey, dark-colored fluid, of a tolerably strong acid re-action; it had not in the least the smell of bitter almonds, but a disagreeable odor of putrefaction. The fluid parts strained off the solid parts were found to consist of half-digested food. The fluid part was searched for cyanide of potassium. It was distilled after addition of sulphuric acid. The fluid contained hydrocyanic acid, which was separated by the distillation; together with this acid, which was only in small quantities, there was also formic acid and fat acids.

Maschka, in Viertelj ahrschrift, Band. ii, No. xvii, 1860.

Chloroform as an Antidote to Strychnia.—Dr. J. R. Smith records the annexed details. In November, 1857, a young man

of the name of Reardon was supposed to have been frozen. Dr. Smith, on being called, discovered symptoms of poisoning by strychnia. The muscles were powerfully contracted, the limbs stiffened, the jaw locked, respiration difficult, and the pulse small and frequent. The severity of the symptoms induced him to think it impossible the man could recover. The first remedy which suggested itself as the best was chloroform, and he administered it by inhalation sufficiently to relax the muscles to admit of easy flexion of the legs and arms; respiration then become quite natural, the pulse less frequent and more perceptible. The chloroform was then withdrawn till the tetanic symptoms returned, and again applied and alternately withheld till the effects of the strychnia passed away, which was about ten hours. Dr. Smith first saw the patient at nine o'clock in the evening. At seven next morning consciousness returned, and the chloroform was then withheld. An emetic was given, afterwards a purgative, and the man became gradually convalescent, his appetite and strength returning, till two days afterwards, when symptoms of strychnine poisoning again appeared, but were not alarming. After this, recovery was very rapid. This man is now a soldier in the Canadian 100th regiment. Twenty-four ounces of chloroform were used, though no doubt much was lost on the sponge; the chloroform was used in such doses as to produce a slight relaxation of the inferior maxillary, and easy flexion of the upper and lower extremities. It appears from the statement of the man himself that he was a hunter, and used strychnia in destroying wolves and foxes, and in a temporary fit of madness, from the use of spirits, took a dose of the poison himself in a glass of liquor. A small vial containing strychnia was found on his person.—*American Journal of Medical Science*, July 1860.

On the Use of Tannin in Large Doses in Albuminous Anasarca.—A case is recorded in which the use of tannin appears to have been attended with favorable results in the removal of anasarca. The patient was in an advanced stage of the disease, the face and whole body being anasarcous, and the urine being loaded with albumen. Small doses of tannin and tonics were employed without effect, and the patient fell into a semi-comatose condition, with slight convulsive movements of the lower limbs, and dilation of the pupils. The tannin was again employed in the dose of half a drachm, and under its use the anasarca gradually disappeared, the patient regained his consciousness, and eventually he entirely recovered.

MONTHLY MEDICAL NEWS.

VOL. III. LOUISVILLE, KY., NOVEMBER, 1860. NO. 5.

THE HUMAN ECONOMY A WORTHY SUBJECT FOR DIVINE PRAISE.

A SERMON, *preached in St. Andrew's Church, Louisville, Ky., before the Medical Department of the University of Louisville, on Sunday, November* 11, 1860, *by the Rector*, Rev. ROBERT W. LEWIS.

"I will praise thee; for I am fearfully and wonderfully made; marvelous are thy works; and that my soul knoweth right well."—Psalms cxxxix: 14.

David, throughout this Psalm, but especially in this verse, is endeavoring to tell how the curious mechanism of his frame, fills his soul, in the observation, with astonishment. He confesses himself overpowered with emotion before the marvels contained in the human constitution; that the wonders of his make are sufficient to cause him to turn and bow with admiring and worshipful reverence before his Maker. We do not conceive that the word "fearfully" as now employed, conveys the proper idea of the feelings that were excited in the breast of the Psalmist. We rather think that a profound and august astonishment was the emotion that arose, as there was a disclosure before him to any measurable extent, of the details of the most glorious work of the Creator's hand. David is declaring that he will praise God, inasmuch as a continuous subject, and an unending occasion of praise are afforded him in the wondrous workmanship that is ever before him in himself—an animated human system. And this language is only the spontaneous and natural expression of every one who shall take an intelligent and thoughtful glance at his fellow-creatures. But especially should these words be uttered with deep meaning by those who are called to study the seat, sources, and remedies of those many diseases that afflict the human body. For man is the great central wonder of God's wide extended

universe. Rather is there in the human economy a two-fold combination of wonders, inviting the most learned investigation; never yet exhausted; affording even in this enlightened age, new subjects continually, worthy of the most profound attention, and which, when compassed, only land the student at the threshold of greater mysteries still.

The physical framework of the human race, if man shall be regarded only in the light in which medical science is apt to think and speak of him, furnishes an unceasing subject, and an unending occasion of praise towards God. The external of a perfect human body is the most glorious visible object in creation. What means the expression, "the human form divine?" Or has such language no meaning? When God said, "Let us make man in our image," there was some reference, I ween, to the glory the Creator has indeed conferred upon the human form of his creature. A symmetrical human person remains to this day the most attractive object in the world. Therefore, have those far-famed works of art, the Apollo Belvidere and the Venus de Medici, challenged and commanded the unhesitating admiration of men for centuries, and shall continue to awaken and elicit praise until this natural body is exchanged for another. "There is a natural body, and there is a spiritual body."

The science of anatomy, however, opens the door of this beauteous temple, and introduces us upon the interior of the soul's earthly residence; shows us avenues of communication winding away and interlacing with each other in a manner comparatively infinite; shows us also one telegraphic system of sensation, and then another of action, after the former of which men have patterned, but in a very bungling way; shows us chemical operations, and not transient or uncertain experiments, that set human alchemy at defiance, and mark the labratory of a Galen as but the play-house of a child; reveals a theater where the principles of architecture, in various combinations for strength or for beauty, or both, are exhibited to a degree exhaustive of human effort in a similar department, whether the contrivance be the yielding arch that gives elasticity to the foot, or the wondrously constructed and suggestive dome of the skull; shows us in fine, a full repertory of all that is valuable and useful on the surface of the earth. When

then we take our walks here and so, if we have a particle of appreciation within the heart, we will say as these wonders are disclosed before us, "I will praise thee, O God, for I am fearfully and wonderfully made."

Time would fail me were I to attempt to speak in any proper manner of these several wonders in detail, or even successively. But there is one thing I will mention, which a person pursuing to any degree the healing art, must constantly bear in mind; and hardly any other feature of the human system displays so largely, in my judgment, the divine wisdom, or calls consequently more upon men to praise and magnify the Lord. This feature is the perfect adaptation of various and differing parts of the system to each other, in order to certain ends, all tributary and promotive of the great end, a vigorous and healthy entertainment of animal life. The study of anatomy in particular, reveals in an astonishing manner, what compensations prevail in the human system; how there is an extraordinary reciprocal relationship between the several parts and members of the human frame; and how the apparent and real inability of one part or organ is made up and supplied in the structure and functions of another part or organ. And the aim of medical science, if I understand that aim aright, being to trace out this connection, and also, a similar compensation that obtains between the human system and external nature, and to find furthermore, how, when, and where best to apply the remedial agent when discovered, to the part or member that is under suffering, how shall not the necessary lines of study and investigation when properly pursued, elicit in view of what shall be disclosed, constant ascriptions of praise to God?

The great endurance of the human system, is another wonder fitted to call forth thanksgiving mingled with amazement. The recuperative powers inherent with the body are prodigious. That quality which often rescues a man from the jaws of death and restores him to the full enjoyment of active life, which gives a good foundation for the line, and a full warrant for the thought, "while there is life there is hope," is at the base of marvels of daily observation; and each exhibition of this nature shall call forth from an intelligent heart such an expression as that which we find in this verse. And then there is

also this endurance of the system in the extent of time through which the body is thus sustained under the attacks of disease, and the wear and tear of an incessant and intense action. "Strange that a harp of thousand strings should keep in tune so long." Oh, if you shall think of the rapidity with which the blood circulates through the minute and delicate arteries and veins as well as through the large aorta, bearing on its bosom richer and more varied argosies than ever floated in Spanish galleons over Indian seas, and safely hurrying away also, and out of the system, small but deadly particles of disease with untiring faithfulness; if you shall think of the numberless demands for muscular contraction upon all forms of muscles; of the unrelieved play of nervous energy, not unlike in kind the play of the lightning of the skies; of the silent but continuous lubrication and working of the various kinds of joints; and then of how this machinery is kept in motion for years and years, until the man quite satisfied with this world, has use for his frame no longer, you surely will find occasion for the most unlimited praise.

One other matter to which I will allude as worthy of the noblest panegyric, is found in the high finish and exquisite workmanship of each part, and which is every where displayed, whether you examine the internal structure or the outward modeling revealed throughout the bony system, or look with an admiring glance at the animation that kindles lustrously in the welcoming eyes of a friend, or upon the soft tints that come and go upon the cheek of blushing beauty.

That science is a noble one which leads to a careful study of these marvels; and with my whole heart do I wish success to all engaged in the pursuit of that knowledge, in the attainment of which, they shall be best able to tell how this wondrous handiwork of the Creator's fingers shall be kept in the largest and most healthy exercise. In a subordinate degree perhaps, but yet in a very extended and distinguished sense is the intelligent practitioner of medicine a co-worker with God almighty. The profession of medicine, in my judgment, stands next and comes very near to the sacred calling of the ministry of the gospel. The man who feels himself impelled to exert his powers for the relief of human bodily suffering, and who is admitted to the regular practice of physic, should regard

his profession, not merely in the low and unworthy estimate which speaks of the great occupation as only one means by which a man may honestly and honorably put money in his purse, but his calling should be looked at and be entered upon rather as an art divine, by and through which he shall be enabled to serve his fellow-creatures to the praise and glory of God.

But all that I have now said with an eye to great brevity, and much more that I might have added, but which I have omitted wholly, may be learnt in an honest and hearty pursuit of the science itself.

There is another branch of the subject, however, that is not necessarily contained in any library, or conveyed in any lectures, which shall be replete with sound medical instruction. The most glorious feature of a man is his spiritual economy, but this is not unavoidably taught in the pursuit of that science which deals chiefly with the human body. Still, there is a divinity that stirs within man's frame quite different from his human vitality. And by reason of this gift that he possesses, is he in the amplest manner a subject furnishing occasion of praise to God. In the mental and spiritual economy of human nature do we find that which renders a man superior to the brutes that perish; and here is that which awakens in its true birth joy even among the angels of God. And to this do we call attention. The poet's language concerning man is only sober truth, and recognizes his two-fold nature.

> "A beam ethereal, sullied and absorpt!
> Though sullied and dishonored, still divine;
> Dim miniature of greatness absolute!
> An heir of glory! a frail child of dust!
> Helpless immortal! insect infinite!
> A worm! a god! I tremble at myself,
> And in myself am lost. At home a stranger,
> Thought wanders up and down, surprised, aghast,
> And wondering at her own. How reason reels!
> Oh what a miracle to man is man."

Ignorance only shall decry the spiritual economy of our being. Ignorance alone depreciates the close and intimate study of man's physical frame; and it is the fool who wilfully goeth on in darkness concerning the nobler and higher part of man's nature. "Mark the perfect man, and behold the upright," if you would see the most glorious specimen of the

divine handiwork; study the external of a true man of God if you would behold one made in the divine image; look at some experienced and practiced disciple in the training school of Christ as he walks abroad, his face radiant with an illumination derived from heaven, his gait and demeanor indicative of his new birth, illustrating in his daily converse the virtues and graces of a celestial state of being, if you would view the highest and severest model of divine proportioning. And we have a perfect exhibition of this kind. The Lord Jesus Christ is the impersonation and embodiment of man's spiritual nature as of his physical frame in its perfection. He is perfect man both in his body and in his soul, and therefore has it been truly said of him,

"How matchless is thy form, O King!
Thy mouth with grace o'erflows;
Because fresh blessings God on thee
Continually bestows."

Into this superior state of existence is each man properly introduced when born anew of the Holy Ghost. With this higher nature is each man endowed when he becomes "a member of Christ, a child of God, and an inheritor of the kingdom of heaven." But if in his outward bearing a christian is the "highest style of man;" if the spiritual part of our nature in its external manifestation is the more exalted feature we can display; if through a sanctified intellect we assert most our superiority over the beast whose physical nature is as fine as our own, and who as far as we can discover has no moral nature to account for, and whose spirit, when he dieth, "goeth downward to the dust;" if through a reason enlightened of the Holy Ghost, we mark our likeness to God; if in the outward exercise of our moral and mental nature we serve as objects of praise before God, much more do we appear fit subjects for lofty thanksgiving before high heaven, when a spiritual analysis shall lay bare the secret and more wonderful operations of divine grace.

Now, in the Bible such an analysis is fully recorded, and in the Scriptures there are also explicit and full directions for conducting such a process of discovery clearly by the youngest and least experienced amongst us. Any one can tell from the sacred volume, of the marvelous adaptations in man's spiritual economy; there is it revealed how a man may be born again;

there is every part and member of his spiritual system accurately described; there will you find written down with minuteness the symptoms of all spiritual malady and disease, the efficacious mode of treatment, and the sovereign remedy that shall bring about a radical and permanent cure.

In the Holy Bible the perfect spiritual man is also portrayed, both with simplicity and with accuracy, and that, in order that those who would be perfect before God may be well informed in every good word and work. The science that shall best repay attention and best show forth how wonderfully man is made, is mentioned in the Bible in familiar terms; and if you would learn how to "minister to a mind diseased," how to restore a disordered soul to life and beauty; if you would study of the noblest part of our nature, and of the means to keep it in order and activity, make yourselves acquainted with the instructions there recorded. The mechanism of man's spiritual economy is more wonderful than the structure of his mortal frame, and more reveals him as an object for divine praise.

But when we realize in additiou the endurance, and the extent of duration of his immortal nature, what room is there for the most lofty gratulation! The natural life of man, though lengthened out to three score years and ten, does quickly fade. His earthly existence compared with his eternal life is but the fluttering of a leaf to the ground. There is an extent and power of endurance attached to and inherent with that faith which is fixed on Jesus of Nazareth, which knows no giving out. Heaven and earth shall pass away, but faith in Christ may only change into a higher manifestation — only be lost in sight.

The source and secret spring of human existence has been one of the objects of research in medical science. Whence does life come, and whither does human life depart, has been frequently discussed. Thus far the inquiry has been only one of leisurely speculation. The workings of the life principle upon matter are apparent, but the secret source of life and the moving vital spark have hitherto baffled all the investigation set on foot for their discovery. The great business of the physician is, simply to preserve and perpetuate life wherever found; simply to protect the blessing wherever bestowed.

But the subtle force that moves in a man's spiritual frame is somewhat revealed before us. Though coming and going like the invisible wind, we know that every one who is born again is born of the Spirit. If we would discern the agency of divine grace, here is the being to whom we may with all success repair; and if we would learn to any valuable degree of man's spiritual nature, let us become enlightened of the Holy Ghost, for these things are spiritually discerned. The influences of the Holy Ghost are adequate to move upon the dry bones, and cause them to come to life; with the Holy Spirit dwells the vital spark of our noblest existence. He can give those powers to a man which shall render him in the highest sense an object furnishing occasion of praise to God.

To man as thus spoken of we beg you will give some attention. Do not occupy yourselves wholly and engrossingly with his perishing body. Remember that he has a soul within his frame, and that two natures are involved in the human constitution. The preparing of yourselves in any degree for going forth in the noble and blessed occupation of healers of the sick, is an exalted and honorable engagement. But a more sublime employment is found in binding up a heart bleeding on account of sin. And in order to this, learn that man as to his spiritual nature, from the crown of his head to the sole of his foot, is full of wounds, and bruises and putrefying sores; that for all moral purposes he is dead; and further, that Christ is the great physician; that there is a balm in Gilead, and that the atoning blood of Jesus of Nazareth shall make the sin-sick sinner whole. This is the worthiest study to which you can give yourselves, and this is the most extensive manner in which praise can be offered before God on account of his human creation.

For the body must die; the patient must at length be relinquished; and you will have to confess, sooner or later, over every subject given into your hands, that you can do no more, that your information and your skill are useful no longer; and when the frame lies still and cold in the embrace of death, little cause does man's physical nature offer for praise to God. We are rather impelled to say, "Man cometh up like a flower and is cut down, and never continueth in one stay." But

"The soul immortal as its sire can never die."

And what honor and success are encountered when one

prescribes in the case of a soul diseased with sin! Knowledge and skill in such an emergency shall never prove vain. Do you but learn of Christ yourself that he is precious, and that his salvation is adequate; do you but tell of him with all fidelity; let there be an application of his blood and righteousness with faith and hope, and the result is infallibly sure. You will not behold death snatching his victim in defiance and mockery of your treatment; but you shall mark the complete discomfiture of death, and see his utter rout on every hand. Thus may you exclaim, "O, death, where is thy sting? O, grave, where is thy victory?" and thus in a more exalted sense than ever, may you declare, "I will praise thee, for I am fearfully and wonderfully made."

I know of no class of men who should be religious men, if not that class and profession whose privilege it is to stand by the bedside of the sick and dying. For when enlightened by the hope of the gospel, they may with all confidence, point out the moral of this world passing away as the pride of the wave, as the decay of the leaf. Thus taught, they shall calm the aching heart as well as restore the afflicted body; or if not permitted longer to delay the final hour, they shall not only smoothe the pathway to the tomb, but theirs shall be the glorious privilege also of enkindling the torch of christian hope. From them and through their ministrations shall this refulgent light be given into the hands of him who is called to tread the dark valley, by the illumination of which he shall walk securely the vale of the shadow of death, and at length come forth upon the light and loveliness of the New Jerusalem.

INTRODUCTORY ADDRESS,

Delivered before the Medical Class of the University of Louisville, on the 5th of November, 1860, *by* Llewellyn Powell, M.D., *Professor of Obstetric Medicine.*

Gentlemen of the Medical Class: As the representative on this occasion of the Medical Department of the University of Louisville, I tender you a most cordial welcome to these Halls; welcome to the means and appliances here provided for your instruction in Medical Science; welcome to our ablest efforts, and our most faithful exertions for your improvement

and advancement in the profession of your choice; welcome to our friendly counsels, our social sympathies, and our unstinted hospitality.

Strangers as are many of you to our persons, and breathing for the first time our social atmosphere, you may be inclined to question the sincerity of a greeting expressed in the warm and earnest language which I have seen fit to address to you.

To relieve you of all doubt on this point, and to guard ourselves against all unworthy suspicions, it will suffice to advert for a single moment to the nature of the relation which is to exist between us, the relation of preceptors and pupils. Fraught as this is with the most sacred and solemn responsibilities, we should indeed be sadly deficient in that high moral sense which should ever and eminently characterize all who are engaged in the work of education, did we not deeply feel the obligations it involves. What are our relative positions? how stands the case between us? A number of ingenuous and confiding young men, moved by an honorable ambition, and intent upon rendering to their generation a useful and generous service, have dedicated themselves to an arduous and noble calling, have linked with it in indissoluble bonds their future destiny, and staked upon the issue all their chances for fortune, and all their hopes for distinction in the world.

In the prosecution of this enterprise, pregnant with interests of the highest moment to themselves, and no less important to the communities in whose midst they may hereafter reside, they have, under our invitation, repaired from their different and distant homes to this goodly city of ours, to seek of us, to enlighten their ignorance, to guide their inexperience, to train them to the study of science, to teach them the philosophy of medicine, and to instruct them in the many practical processes which enter into and constitute the Healing Art.

In these simple facts we recognise the strongest appeal to our honor, and in view of the responsibilities which it involves to our conscience and to God, "who is greater than our conscience," it becomes next to impossible that we can deceive you by professions of an interest we do not feel, or delude you with promises which we have not the ability and intention to fulfill.

It is the deep interest which, in common with my colleagues,

I naturally feel for young men who look to us for counsel and instruction, and an earnest desire to save them, if possible, from some false step, or some fatal error in the beginning of their career which would embarrass all their future course, and defeat their most cherished hopes, which prompt me to embrace the present as a suitable occasion upon which to offer you some general reflections on the *spirit* and the *views* with which you should enter upon the medical profession; the *qualities* and *qualifications* which are required for its successful pursuit; the *difficulties* you may except to encounter, and the *reward* you will be entitled to look for.

As medicine is an art which was instituted and designed for the benefit of infirm and exposed humanity, and is continually exercised amid scenes of suffering and sorrow, of anguish and alarm, of bereavement and destitution, in the squalid abodes of poverty, and in the infected districts of pestilence, where all the associated circumstances are such as tend greatly to pain the sensibilities of the practioner, to task his energies and tax his patience to the farthest limits of endurance, demanding daily and almost hourly the sacrifice of his personal ease and comfort, debarring him the pleasures of society, denying him the privilege of travel, interrupting the order of his home, and estranging him, in a great degree, from the wife of his affection, and the children of his care; seeing, I say, that such and so great are the mortifications, the labors, and the privations to which you are destined, it is obvious that the true spirit of your calling is a spirit of pure benevolence, a generous and self-sacrificing philanthropy, which esteems as the highest enjoyment the luxury of doing good, and the melioration of human wretchedness man's highest mission upon earth; in the accomplishment of which he is to shun no responsibility which it involves, to shrink from no labor which it imposes, to retreat from no peril which it threatens.

The position which you have assumed, gentlemen, will make it incumbent upon you to cultivate the spirit of heroes and martyrs, for you will often be called upon to exercise your vocation where only the spirit of the hero and the martyr can sustain you; the danger you will encounter on the field of pestilence is greater than confront the soldier on the field of battle; and should you fall, as the members of our profession

are so often doomed to fall, while fighting with deadly contagion, no public honors will attend your obsequies, no muffled drum or slow booming cannon will proclaim a hero fallen and a hero mourned, and no proud monument commemorate your names. But a richer consolation for your dying hour than all anticipations of such empty pageantry, you may enjoy in the consciousness of a duty well performed, though unacknowledged by the world; and of a mission gloriously fulfilled, though no marble column bear the record of your deeds.

If, gentlemen, after a rigid examination into your feelings and motives, you shall be conscious that you lack in any notable degree this moral heroism, this self-sacrificing devotion, which is justly esteemed the first attribute and chief ornament of a good physician; if you can not, at the call of duty, renounce self, repudiate pleasure, sacrifice ease, encounter labor, and endure hardship, you can never conceive and entertain that love for your profession, without which no man can achieve in it any eminent success; and I honestly warn you to retire in time from a vocation for which you never were designed, and to prosecute which in continual want of that moral harmony which should ever subsist between a man and his daily calling, would be only to mar your happiness by rendering your whole future life a painful and an unprofitable struggle.

Not less important to the successful pursuit of your profession is a reasonable and abiding confidence in the truth of medical science, and in the power of the medical art to achieve the important results at which it aims, viz: the preventation and cure of diseases.

Skepticism on these points is pregnant with mischief. To be doubtful is to be irresolute; the mind ever halts and vacillates in the pursuit of knowledge, which is held to be of questionable verity, and hesitates in the application of remedies of whose efficacy it is not well assured; a lack of confidence always carries with it a corresponding lack of energy; the zeal of the student is largely abated, and the efficiency of the practitioner is greatly impaired.

You need to be strongly admonished in this connection, because it has long been an evil fashion in the world to profess skepticism in medicine. The wits, satirists, and grave essayists

of all ages, have asserted and reiterated against medical science, and the art of healing, the reproachful charges of imperfection and uncertainty. It is not denied that errrors and uncertainty attach to medical doctrines and medical practice, but it may justly be denied that these errors and this uncertainty, are inherent and peculiar. They proceed only from the fallibility of human judgment, and false methods of investigation, which in a greater or less degree affect all other sciences and all other pursuits, which if fairly judged would in general be found in these particulars full as obnoxious to criticism and discredit as are the science and art of medicine. The glorious uncertainty of the law has grown into a proverb. Observe what is passing in our temples of justice; look at the conflicting testimony of the witnesses, the direct antagonism of the advocates, the dissensions of the jury, the hesitation of the judge, and the reversals by one court of the decisions of another, and tell me whether you can claim for jurists and barristers more stable and reliable opinions, or more uniform and consistent practice, or more certain results, than should be accredited to physicians.

Has political science attained perfection? and are statesmen and politicians all of one mind? The intellectual and moral constitution of man is every where the same, and in the same age of the world, and at or near the same grade of civilization, *i. e.*, possessed in nearly equal degrees of the lights of science, literature, and religion. We might reasonably suppose that nations thus closely assimilated would live under the same political institutions; and yet in this nineteenth century we find them differing essentially, and irreconcilably, in the form and spirit of their governments—that government being a despotism in France, a limited monarchy in England, and a republic in America. Here in the United States, a single political family, one school of politics, with a constitution drawn up with a wisdom and perspicacity which will forever challenge the admiration of the world, defining with wonderful precision and clearness, Federal powers and State rights, and separating the fundamental departments of the general government by broad, deep lines of distinction; here in our highly favored country, are we permitted to contemplate political science as free from the errors, the doubts and uncertainty with which medicine is so constantly and so cruelly

reproached? Interrogate our earlier history, and the answer will be, No! for controversies and parties on vital questions in political science are almost coevil with the government. Interrogate history at a later period, and still she answers, No! Ask the same question of the present crisis in our public affairs, and again the answer comes back in mournful cadence, No! For further and final illustration on this point, let us turn our attention to the science of Theology, even as it exists among christian nations, and at the most enlightened period of the world. Of all the sciences, this alone has received the benefit of a full and divine revelation, written in characters so large and bright that he who runs may read, and indicating the path of duty and the way of salvation so plainly that the wayfaring man, though a fool, need not err therein; and yet who will venture to assert of Theology, as entertained among men, that its doctrines are more truthfully taught, its precepts more consistently enjoined, and its aim more certainly attained, than are those of medicine? For proof to the contrary, look at the countless volumes of controversial literature in the department of Theology; listen to the opposite dogmas and positive contradictions every where proclaimed from the pulpit; see society divided into sects, and confronted in dispute, the leaders hostile and defiant, and their followers (blind and devoted partizans) exclaiming, not is it true I am of Paul, I of Cephas, and I of Apollos, but in the same spirit as of old, I am of Socinus, I of Calvin, I of John Wesley, and I of Alexander Campbell. No, gentlemen, our noble science has been too often and most unjustly impugned, as deficient in fixed principles, incongruous and incoherent in its arrangements, obscure in its indications, and so uncertain in its aims as scarcely to be entitled to a rank among the sciences. Scorn and repel the foul aspersion; know and cherish the conviction that there is truth in medicine; that within the sphere of its operations our benign and benificent art is mighty for good, and that the profession of your choice is stamped with the highest marks of dignity, for the all-wise God sanctioned it by his teachings to Moses, and the blessed Saviour exercised it among his chief offices while sojourning upon the earth.

Other and powerful, though subordinate considerations, may be urged in behalf of the claims of medicine to a place of

rank and dignity among the sciences. It may be safely assumed of all the sciences, that in so far as they are accessible to human intelligence, and within the reach of human effort, their development and approach to perfection have always been, and must ever be, in proportion to the measure of thought and amount of investigation bestowed upon them. Accept this test, and try our science upon the principle proposed. Aversion to pain, the dread of death, the instinct of self-preservation, offer to the human mind the strongest motives to action, and irresistibly persuade it to inquiry in this direction; and hence we find from the earliest recorded time, the minds of men have been devoted to the study of disease and the means of cure, with an earnestness, energy and perseverance commensurate with the inestimable and incomparable value of the interests to which they relate. At the very dawn of civilization, men pre-eminently distinguished for their skill in medicine, were invested with divine honors, and temples were erected and dedicated to their worship. As the noblest and mightiest intellects are ordinarily those which are most captivated by visions of glory, and most aspire after fame, we may safely conclde that the best minds and the most vigorous efforts were devoted to the cultivation of that science, which was held in the highest esteem, and which promised to its votaries the highest honors. In the temples of Æsculapius were gathered a numerous priesthood, of the highest caste in the community, the trained intellects of their time, devout worshippers of science, hungering and thirsting after knowledge, and covetous of fame. So characterized and distinguished, it must be conceded that they were eminently fitted for scientific investigation, and needed only material and opportunities for observation and experiment, to enable them to give medicine as much of verity, dignity, and practical usefulness, as could be fairly claimed for any other branch of cotemporaneous knowledge. Happily the requisite material, and fitting opportunities, were furnished in large abundance, through a custom enforced by authority, which compelled the sick to be exposed in public places, there to be observed and prescribed for by all who had suffered or witnessed similar diseases, or to repair to the temples for consultation to the priests, and to suspend upon the walls and pillars of the sacred edifices their votive tablets,

descriptive of their diseases, and setting forth the remedies which had proved effective in their cure. From contributions so numerous there must have accumulated a mass of material far exceeding in amount the collections supplied to any other branch of knowledge, crude and chaotic to be sure, but destined in the lapse of time, under the operation of the master minds continually at work upon it, to assume the form and symmetry of a truly scientific edifice.

Among the impugners of medicine are to be found some who graciously concede to it some claim to the dignity of a science, but deny that it exhibits a progressive development and improvement, affirming that in the onward march of the sciences it remains stationary, or falls greatly in the rear; or, in other words, that modern medicine is but little in advance of the medicine of the ancients, but little augmented in its resources, and conferring on mankind but few additional benefits.

We have but to appeal to the record for refutation of this charge, which is not more remarkable for its injustice than for its ingratitude. The discoveries of the circulatin of the blood, by Harvey; of the laws and forces of vitality, by Haller; of the prophylactic power of vaccination, by Jenner; of physical diagnosis in diseases of the chest, by Avenbrugger and Lannæc; of the curative powers of iodine in scrofula, by Lugol; of anasthetic virtues of chloroform, with its medical and surgical uses, by Simpson; the control of pulmonary consumption by the use of cod liver oil; the extended use of quinine in diseases of periodic type; and the prevention and arrest of pestilential epidemics, through improved systems of hygiene, are a *few* of the brilliant achievements of modern medicine, and a *small* part of the signal benefits she has conferred upon humanity; time and language would fail me to recount and express the sum. Refer to the statistics of the last half century, and find there the testimony with which to rebuke and shame the revilers of our art. The following statements I quote from a recent and reliable work:

"The reports of the Paris Hospital show that in 1805, one in seven of those admitted died; at a period fifty years later only one in twelve died, a reduction of mortality equal to seventy-one per cent. Moreover, the duration of the treatment has been greatly abbreviated: in 1805 the average term of

confinement to hospital was thirty-nine days, now it is twenty-four days, a saving of fifteen days in time and suffering."

During the same period the improved results of treatment in special diseases are most striking; thus in one class, especially familiar to my colleague, Professor Yandell, the mortality has been reduced from one in fifty-six to one in two hundred and ninety-four. The returns of the Registrar General, of England, show a regular and notable decrease in the rate of mortality from 1828, the beginning of the returns, to 1848. In France the duration of life has been increasing in the ratio of fifty-two deaths for each year from 1776 to 1842, or 9½ years of the whole period. In surgical practice the saving of life exceeds by more than thirty-five per cent. the results at the beginning of the cenutry. In obstetrical practice, one hundred and fifty years ago, according to Dr. Merriman, one in forty died; at the close of his tables in 1828 only one in one hundred and seven died, and at the present day not one in two hundred and fifty is lost. Examine the reports of the Registrar General, of England, the date of the Carlisle and Northampton life tables, the statistics of the Bureau Centrale, of Paris, the hospital reports of our own country, and you will find them all bearing concurrent and honorable testimony to the same points. Life has been prolonged more than twenty-five per cent. in the past seventy-five years, and the duration of treatment lessened more than one-third. Behold, gentlemen, this proud array of facts, this brilliant display of success, and say, if we may not in exultant tones, exclaim of medicine, grand science, benign art, glorious profession.

It will not suffice that you are possessed of a benevolent spirit, and repose faith in medicine; to these must be added a taste for natural science and a capacity to investigate it in the numerous relations which it bears to the constitution of man and the art of healing. Extensive as is the field here indicated, you may not rest satisfied with general views of superficial observations; to be a true interpreter of nature, and an able exponent of her laws, as bearing upon life, health, and disease, you will need to be much engaged in special investigations and minute researches, requiring the aid of many sciences and the help of abundant learning.

I would not deter you, gentlemen, from the noble enterprise

upon which you have entered, by exaggerating the boundaries of medical science, and multiplying unnecessarily the objects of legitimate inquiry which these boundaries include, but I do desire to impress you with a due sense of its magnitude, and a befitting respect for its dignity, and the more, that from the nature and influence of our political institutions there is a popular tendency with us, and a growing disposition among our people to withhold from learning the veneration to which it is entitled; to abbreviate in medicine, as in every thing else, the term of apprenticeship, to claim as easy access to scientific as to legislative honors, and to graduate native doctors with almost the same facility that we naturalize foreign citizens. I might consent to the hasty and unceremonious introduction of foreigners into our temple of liberty, for they soon learn to worship there decently and in order; but in due regard to propriety, and in the name of humanity, I protest against the intrusion of the unlearned and unsuitable into our temple of science, for they never can lay upon her altars any acceptable offering. Be not deceived, gentlemen, by the popular notions on this subject; learning is now as heretofore, and ever will be, indispensable to the physician. We are not prepared to point you to any short and pleasant by-ways by which to attain a professional eminence, nor to indicate any smooth and flowery paths along which the weak, the ignorant, and the indolent, may saunter with easy and untiring tread into the domains of science, in the vain hope that the multitude are to find indiscriminate admission there. On the contrary, you should start upon your journey with the conviction that the way before you is narrow and tortuous, always rugged and often obscure, where the ignorant are bewildered from the beginning, the weak soon falter and faint, and the timid turn back discouraged and affrighted. But if, gentlemen, you possess the requisite endowments, but a reasonable preparation for the high vocation to which you have devoted yourselves, be not discouraged by the difficulties which lie before you; these are not insuperable in themselves; they are such only as have been overcome by the many who have preceded you in the struggle, and such as you can also conquer if you but summon to the task that measure of earnest and persistent labor which shall correspond in any fair degree to the extent and

importance which belong to it. Take formal leave of leisure, improve each passing moment as it flies, relieve the severer studies of science with the lighter readings of literature; as far as possible add to the skill of the physician the accomplishments of the scholar, and you will have fairly won, and may justly wear, the honors of the doctorate.

It can not be expected that within the limits of this brief discourse I shall enumerate in full, or very minutely indicate the qualities and qualifications, the endowments and acquirements, which are required for the successful pursuit of the medical profession; but I hope to make such clear and sufficient reference to the chief and most important of these, that should you hereafter find yourselves yoked to an uncongenial calling, though not forearmed against the disappointments which in such event will invade your peace, you shall not have it to say that you were not forewarned. In the preceding remarks upon the spirit and motives which should actuate you in the adoption of medicine as a profession, I have already adverted to the moral dispositions which should distinguish the physician; I am now to add that in none other of the pursuits of life are required so great a number, so high a perfection, and so rare a combination of physical and intellectual faculties as in the study and practice of medicine. Observation upon countless objects and innumerable phenomena, experiments multiplied under circumstances but too well calculated to embarrass and obscure results, analysis the most acute and searching, induction the most cautious and well considered, and a nice adjustment of principle to practice, these are the difficult tasks to be encountered and performed.

To conduct aright and profitable the work of observation, it is obvious that the perceptive faculties should be vigorous, vigilant, active, and habitually exercised, since, in his investigations into the physical characters and sensible properties of the innumerable bodies with which he has to do, the physician must be cognizant of all that is visible, audible and tangible in the line of his inquiries. How essential to the physician in the very important tasks of diagnosis and prognosis, are quickness and accuracy in the visual sense, is made evident when we reflect upon the significancy which attaches in these respects to shades of color, to expressions of countenance, and to the

comparative size and form of correlative parts and organs. To the great superiority of this sense, whether as a natural gift, or the result of intelligent and careful cultivation, are we to attribute the remarkable readiness with which some practitioners will occasionally detect a disease or an injury, the correct estimate they will form of the probable issue, and the tact with which they will apply the appropriate remedy.

Quite as important, if not so numerous, are the professional services subserved by the sense of *hearing*, and without an ear well organized and duly trained to the perception and discrimination of sounds, a physician will fall short of the demands of modern medicine, percussion and auscultation will fail to reveal to him healthy and morbid conditions otherwise obscure and wholly hidden from his view, and for him Avenbrugger and Lannæc, Corvissart and Hope, Williams and Kennedy, and others scarce less illustrious than these, will have written and published in vain.

A lower sense than either of the foregoing, but of inestimable value to the physician, when developed by experience and use to that exalted degree which will entitle it to be named the "*tactus eruditus*," is the sense of *touch*, furnishing a medium through which to explore certain cavities and organs which can not or may not be reached by the eye, and will not speak to the ear, while to the surgeon it is indispensable, as intimately and inseparably concerned with the delicate manipulations and the dexterous use of instruments which make up so large a part of the difficult and daily duties of his professional life.

To reach the hidden truths of science, to evolve and elucidate principles, and establish theory upon the sure basis of facts, it is often necessary to institute skillful experiments and profound researches. To do so with any reasonable hope of success, it is demanded of the physician, not only that his perceptive faculties shall be active and duly trained to their respective offices, but is also, and no less required, that his mind should be so well balanced by nature or discipline, that the imagination shall ever be restrained by judgment, that he be not satisfied with mere hypothesis, however plausible, or led captive by speculation, however ingenious and beautiful; he must be able to discriminate between facts and fancies, to resolve into their elements, by a close analysis, the subjects

and questions submitted to his consideration; to distinguish the primary and essential from the secondary and adventitious; to classify facts and phenomena according to their due order and relative importance; and by a fair and vigorous induction, to determine the laws which govern disease, and the rules which should guide and control his practice.

You are ready to exclaim, "who is sufficient for these things?" None wholly and entirely so, and hence medicine is, as it has been, too reproachfully termed an uncertain science; uncertain, however, not because it has no fixed laws and no sure results, but because physicians do not always comprehend its laws and skillfully apply its rules.

Although on account of the difficulties which belong to it, it may not be possible to reach perfection in medical science, it is the duty of all who pursue it conscientiously to hope and to strive for an approximative excellence. To justify such a hope and to engage in such a struggle with any fair prospect of success, it is requisite in the medical student not only that he possess a mental organization adapted to severe analysis and sound induction, but also that he shall have been exercised and trained in these highest offices of mind, by at least a moderate share of scholastic discipline. And here we are led to consider very briefly, a question in regard to which various and conflicting opinions have been expressed, viz: how much, or how little of preliminary and general education is necessary to qualify and entitle an individual to be numbered with a class of medical students. Surely all will concur in the propriety of excluding such as can not speak and write correctly their own vernacular or native language. The language of science is the language of the learned, and to the grossly illiterate, can of course be little else than a jargon of unintelligible sounds; but a perfect unanimity of opinion does not prevail as to the necessity and importance to the medical student of even a moderate acquaintance with the dead languages. There are some even eminent men, themselves scholars and savans, who have not hesitated, upon occasions of special purpose, to disparage Latin and Greek, as peculiar and proper only to the remoter and darker ages of the world, as the fitting drapery in which is shrouded the obsolete learning of antiquity, as the key to knowledge only when knowledge was in the keeping

of monks, and it was the policy and purpose of priestcraft and kingcraft to exclude the masses from the elevated and privileged walks of science, and as wholly unnecessary in the nineteenth century, in which modern medicine claims independence of antiquated authorities.

I can not, gentlemen, esteem so lightly, the value to the medical student of the study and knowledge of these time-honored languages. The close and patient study which is required for their acquisition, is a salutary and useful exercise to the mind, and in tracing words to their roots, carefully considering their import, measuring their force, and translating them into new forms and combinations, you necessarily train the mental faculties to those very habits of attention, analysis, and comparison to which I have already adverted as essential to the student of medical science. They are, moreover, the languages in which the great fathers of medicine recorded their observations and opinions, and through which have been transmitted to us a very large share of the professioual knowledge which artful and arrogant writers of our day claim to present as original and new. The powerful and abiding influence of those ancient writers over modern medicine is not only seen in the presence of many of their doctrines, but is still more sensibly and universally felt in the *nomenclature* of medical science, derived as it is in such ample measure from the Greek and Latin, that without some knowledge of these languages it must be an embarrassing task to read a medical book or to follow a medical lecture. To be profitable to the student the language of his teacher should be clear, if possible, to perfect transparency, revealing his thoughts so instantly and distinctly that they may be perceived at a glance; and it is obvious that no pupil can follow a current of ideas, pursue a train of reasoning, or keep up with a course of instruction, which are expressed in a language which necessarily abounds in terms which he must pause to consider, and which must every moment distract his attention and obstruct his progress.

It is true, that without a knowledge of Greek, John Hunter made himself the first Physiologist of his day, and that in ignorance of Latin, Sir Astley Cooper became the most eminent Surgeon of Europe. It is equally true that in other departments of knowledge and skill, men of extraordinary ability

and perseverance, have reached the highest attainments and excellence, under circumstances which would have confined the vast majority of human intellects within the limits of hopeless and helpless ignorance; but these distinguished individuals were gifted with the divine power of genius, which enabled them to soar above all difficulties, and made them independent of the aids which are indispensable to minds of common mould.

In the spirit of disparagement which I am now deprecating, it has been tauntingly asked, can Latin set a leg, or Greek cure a fever? A negative to this question may be frankly conceded, and that the surgeon and physician can very well perform these special and important offices without assistance from either. It is nevertheless and still beyond all reasonable question that they largely contribute to qualify the student of medical science for the whole and ample scope of labor which lies before him, and greatly aid and facilitate him in the attainment of professional knowledge. They are, moreover, important in reference to the social position which is every where assigned to the physician. As a member of a learned profession he is admitted to a place among the highly educated classes, he is thrown into free and frequent intercourse with cultivated society, where conversations in which he must participate, will often turn upon topics of elegant literature, and where his total ignorance of classic lore will expose him to the severest mortification, and reflect discredit and contempt upon his profession, whose respectability and dignity he is morally bound to uphold.

But if it is thus necessary for a pupil to study mere words before he can profit by a course of medical instruction, still more important is it that he should at least be partially acquainted with certain *things*, which though not in a strict and narrow sense belonging to medicine, are nevertheless collateral or tributary thereto. Mechanics, Hydraulics, Hydrostatics, Pneumatics, Optics, and Acoustics, all furnish principles or facts more or less concerned in the pathology of diseases and the application of remedies, and hence it is most desirable that the medical student shall have familiarized himself in some good degree with the elements of natural philosophy, before he engages in the formal study of his profession, whilst

he should also remember that mental and moral science will supply him with important helps in the investigations he will be required to make, and the duties he will be called upon to perform.

I would not impose upon you, gentlemen, any burdensome or unnecessary tasks; still less do I desire to alarm you by a paradeful and formidable display of obstacles which may impede your onward progress; but I hold it to be my duty to warn you that one of the earliest and most perplexing of your difficulties, will be found to lay in a deficiency of elementary knowledge in the very particulars to which I have so particularly referred. If in the case of any of you this deficiency be extreme, it is well for you to know that insuperable obstacles will beset your path, and that it will be your sure misfortune to encounter in the calling you have chosen, an unequal contest and a fruitless struggle; but if only partial, your defects may be supplied by a resolute and dilligent use of all accessible means of instruction during the many hours of intermission in strictly professional studies, which would otherwise be wasted in frivolous amusement or enervating pleasures.

But admitting you to be liberally provided with the elements of general knowledge, some of you, I apprehend will experience a difficulty of no small magnitude resulting from an irrational and injudicious method of conducting the earlier stages of professional study. A restless activity is the prominent characteristic of our countrymen, and in their eager desire for a rapid progress they overlook the necessary steps to a safe and certain progress; intolerant of restraint, and impatient of delay, they would pass from the starting point to the goal of their career at a single stride, and as in commerce and politics, they would spring at once from poverty to wealth, and from obscurity to distinction. So in medicine they would advance by a quick transition from the rudiments of science to its highest and most difficult attainments; and hence it too often happens that the medical tyro attempts vainly and unprofitably the simultaneous study of the several sections comprehended in the entire circle of medical science; he hastens from the rapid and superficial reading of a book on Anatomy, to a like summary dealing with the volumes which treat of physiology, pathology, and therapeutics, long before he has familiarized

his mind even in moderate degree with the mechanism and movements of the animal machine, he proceeds to investigate the laws which control this mechanism and regulate these movements; with the very slightest acquaintance with the economy of health, he starts upon a blind search into its manifold derangements, and thus all unfurnished for the task, he passes to the study of practical medicine, and inquires into the art of healing disease, while he is not yet enabled to recognize, or define, or comprehend disease, and hence it is not surprising that pupils whose early studies have been thus ill-advised and ill-directed, should commence their attendance upon a course of lectures in a sad confusion, and close their attendance with that confusion worse confounded.

If in any case so grave an error has been committed, you can not too soon commence the work of reformation, and to make this work effectual, it will be necessary to begin "*de novo*," to start afresh and in the proper course. Surrender the time hitherto given to medical study, if thus misdirected, as a total loss, and your irregular and imperfect acquisitions as of little worth. Attempt no more than you can fairly and fully compass. Be more solicitous for medical knowledge than for a medical diploma, and though it may seem to retard you in your professional career, be content to devote the first year or your pupilage exclusively to the primary or fundamental departments, reserving the study of the ultimate branches for the subsequent years, and your final efforts; you will thus have laid a true and sure foundation on which to erect a superstructure of some stability and value, and established a claim to public confidence which will not fail of its due consideration.

I may here venture a passing remark upon a difficulty to which medical students and young physicians are peculiarly exposed, which more than all things else has at all times retarded the progress of medical science, and which, if not sedulously guarded against, will make your professional attainments of very doubtful value. I allude to a too ready and servile submission to the tyranny of medical systems, and the despotism of medical authorities. The history of medicine too plainly reveals to us the extent and obstinacy of the evil to which I have referred, showing how humoralism and solidism, and many other isms of more modern date, but no less

arbitrary and exclusive, have constantly exercised their potent and oftentimes mischievous influence over the theory and practice of physic, and that medical theorists of distinguished reputation, from Galen to Broussais, while they have done much by their labors to inform the profession, have done scarce less by their authority to blind and mislead their followers. It is easy to show how a devout veneration for authority must shackle the free action of your minds, limit the resources of your art, and lead you into gross errors of practice. Are you a disciple of Cullen? you adopt his hypothesis that the approximate and essential cause of a large and important class of diseses under the denomination of fever, resides in a spasm of the extreme vessels, you limit your pathological inquiries to this narrow ground, and, if true to your principle, you will rely chiefly if not exclusively upon diaphoretics as your means of cure, and may possibly decline to the low level of that vulgar class of practitioners familiary termed steam doctors. Are you a follower of Brown? you believe with him that a majority of diseases have their origin in a deficiency of vital excitement, brandy becomes your great catholicon, you ply your patient with abundant stimulation, and if he escapes the danger of apoplexy and inflammation of the stomach, you have at least imbued him with a taste for strong drink, and engrafted upon him the habits of the drunkard.

Perhaps you have been led captive by the eloquent teachings of Broussais—he has convinced you that "gastro enterite" is the prolific source of numerous maladies. You are delighted with the simplicity of his discovery, and you amuse yourselves, and trifle with the life of your patient, in the administration of ptisans, and the application of a few leeches to the epigastrium, while poison is circulating in the blood, and disease, unnoticed and unrestrained, is ravaging other organs and tissues of the body no less important and vital than the stomach which has so voraciously swallowed up all your attention.

It may be that you are not enthralled by either of the delusive theories or false teachers to which I have referred, but you repose faith in homœpathy; you hold to the axiom "*similia similibus curantur*," vulgarly translated, a hair of the dog will cure the bite; you embrace the mystical philosophy of Hahnemann, and accept his fundamental proposition as declared in

his own words, that "diseases consist in immaterial alterations of an impalpable vital principle;" and with this incomprehensible nonsense for pathology, you will of course combat the most formidable diseases with infinitessimal doses of moonshine, and fully entitle yourselves to be classed among lunatics. As a necessary precaution against this blind faith in systems, and a servile submission to authority, you should adopt as your rule a rational eclecticism; as time and opportunity allow, investigate with candor each and every system which may be offered for your instruction, and while you regard with suspicion what is specious, and reject what is false, embrace and follow after truth wherever it may be found, cherish and cultivate the habit of mental independence, and while you render to your teachers the respect which is due to their position, receive their teachings with implicit confidence only when susceptible of a fair and satisfactory demonstration.

There is another difficulty which may claim your notice, the difficulty which, much to his embarrassment and disappointment, the young physician always experiences in his first attempts to reduce to practice the principles and precepts which the books and his preceptors may have taught him. If you would avoid painful perplexities and mortifying and mischievous blunders when you enter upon the active duties in your profession, fail not to improve to the uttermost the opportunities for clinical observation which will be afforded you at our college clinics and in the wards of our city hospital; the advantages you will there enjoy in studying the different phases of disease, and in watching the administration and operation of remedies, the use of instruments and apparatus, and the discipline of the sick under the conduct of your accomplished and skillful teachers, your own subsequent experience will alone enable you to appreciate.

But I refrain, gentlemen, from any further exhibition of the difficulties you may expect to encounter, with which, if I have not alarmed, I have at least sufficiently wearied you, and proceed, with more pleasure to myself, and more satisfaction to you, to notice the rewards you will be entitled to look for. Whether the compensations which belong to the medical profession are to be appreciated as rewards, will greatly depend upon the spirit and motives with which you adopt and pursue

it. If avarice be your ruling passion, and the acquisition of money your chief purpose, allow me to say, that you have mistaken the path which you ought to tread, and that unless you start upon a surer and directer route to the goal which you desire to reach, the extortionate usurer, the sagacious speculator, the enterprising merchant, the industrious artisan, and even the contemptible nostrum monger, will far outstrip you in the race after wealth. But if you will rightly esteem them, your profession holds in reserve for you far richer tributes of enjoyment and happiness than wealth can purchase in the gratifications it will afford to your moral, intellectual and social faculties, in all their purest and highest aspirations.

The wise and beneficent Creator has so constituted man, that it is a fixed law of his nature, that his supremest enjoyments are ever to be found in the exercise and display of his best attributes, his highest powers, and his most amiable dispositions, and you will accordingly find that with this constitution of man, the studies, and duties, and privileges of the medical profession, are in striking and beautiful harmony. Your observations and reflections will perpetually bring before you such impressive exhibitions of the wisdom and goodness of the Deity, that you can not fail to experience, in the ennobling sentiments of veneration and gratitude, the very largest measure of enjoyment which rational and cultivated minds are capable of receiving; while in the practice of your art, the sentiment of benevolence will be kept in full exercise and gratification, and as you move, it may be anxiously and wearily, along the path of duty, giving eyes to the blind, feet to the lame, vigor to the infirm, and rescue to him that is ready to perish, your grateful beneficiaries will rise up on either side and "call you blessed."

From much that has already been said, you will have perceived that the mind of the physician, if fully up to his responsibilities, is severely and habitually exercised in the most extensive and profound researches, and you will readily admit that to every man whose intellectual faculties are thus stimulated and developed to a large capacity, it is an ample, a munificent reward for all the labor and privation which he may have endured, that he is able to soar at will into the highest regions of thought, and while he contemples Nature

in her sublimest mysteries, to feel that he is but little lower than the angels, to be conscious of a god-like power, and exult at the Divinity which stirs within him.

As to the social enjoyments of the physician, these also are of a peculiar and an elevated character. The serious and absorbing nature of his duties will, it is true, in a great degree exclude him from the so-called pleasures and amusements of society—he may not mingle with the gay and giddy throngs which frequent the theater, the ball-room, and the banquet-hall, but it is his higher privilege, while treading his daily round of professional duty, to meet and converse with his fellow-men in their quiet and pleasant homes, where, stripped of the disguises and asperities with which they are invested while engaged in the traffics and conflicts of the outer world, they display their social virtues to the best advantage; or, with equal benefit, to encounter them, at intervals, in literary societies and scientific associations, there to barter in the rich commodities of an intellectual commerce.

But in this connection a still greater privilege yet remains to be mentioned. You surely, gentlemen, will rate it high among the compensations of your hard vocation: that it will bring you into frequent and familiar intercourse with the gentler, the fairer, and the better sex—that you, beyond all other men, will enjoy opportunities to observe and appreciate the loveliness of woman—for to you, with the beauty of her countenance, the graces of her person, and the fascinations of her manner, all hightened and hallowed by the full glow of her tenderest and holiest emotions, will she appear in the chambers of the sick, a ministering angel, an embodiment of heavenly mercy, an image of the Divine love, an object of idolatrous worship. Such being woman as she appears to us, well may we extenuate the imputed fault of Adam, who preferred to be cursed rather than part company with his lovely consort. I must be permitted to confess that I agree with the old sinner in his exalted estimate of woman. In my high appreciation of his good taste, I forget the grievous wrong he inflicted on his posterity; and I greatly fear that I, too, a legitimate son of my venerable first sire, inheriting a full measure of his amiable weakness, would choose to be cursed with her, rather than be blessed without her.

And now, gentlemen, bear with me a moment longer for a parting admonition. We live in an age and a century of peculiar and distinguished privileges, and should never forget that with these are associated for us the weightier responsibilities, the venerable stores of ancient learning, the ever accumulating discoveries and improvements of modern times—freedom of thought, and freedom of the press, all are alike ours. With ample opportunities to learn, and ample facilities to communicate, the debt imposed upon us by the *past*, we are under obligations to discharge with interest to the *future*, or as better expressed by an elegant writer in our profession, "we are the fortunate heirs of Time, and having so rich an inheritance of wisdom and knowledge, we are bound to hand it down to our successors, not only unimpaired, but also enlarged and improved."

A LECTURE ON "THE HAND."

BY J. W. BENSON, M.D.

[Repeated and published by request.]

During my lectures last winter, and while speaking of the anatomy of the hand, I incidentally remarked that at a future time perhaps I might return to the subject, and speak of its physiology. The promise thus made, had well nigh passed from memory, when I received a note couched in kindly language and signed by several of the class, recalling it to mind, and soliciting its performance. That note was received at the close of the session, and although fully appreciated for its kindness, was laid aside, and the promise forgotten, but latterly my attention has been again directed to the subject, and in compliance with the request of friends, I propose to solicit your attention for a brief portion of this evening, to some of the more striking features which the consideration of the subject presents.

Let me premise, therefore, by a brief allusion to the general structure of the human hand. Twenty-seven bones enter into its formation, each one in itself an illustration of Divine prescience, each illustrating in its inherent composition a looking forward to effects, a provision for results, a series of arrangements adapted to the accomplishment of important purposes, each in itself a monument giving the lie to infidelity

and chanting a hymn of glorious praise in honor of the great Creator; and these form a base upon which one of the most beautiful superstructures in the body lies. They are arranged with reference to the greatest amount of strength consonant with suppleness, being moved upon each other in various ways, so that both rotary and hinge motions may be performed with freedom and accuracy. I have said, being moved upon each other, because bones are passive and powerless, save to resist force—activity they do not possess. The organs which act upon them are muscles, and hundreds of these are often in simultaneous action, in order to give precision to the movements of one finger only. But the muscles have not abstract power sufficient to induce these motions, they too are acted upon. Hence they are supplied with nerves, themselves powerless, and acting only the subaltern part ot conduits of force. This force is sometimes generated by volition, volition by the principle of life, the principle of life by the Almighty. There may be animal motion without volition, but not without life. There is a local life which parts enjoy, and by which they move, and the heart is most tenacious of this life, but it is only ephemeral, and the sad, hushing expression, "the stillness of death," is full of meaning, and soon is realized.

The nervous influence we study rather for what it is not, than for what it is. The latter is a subject for our faith, and its investigation brings us, as it were, into the presence of Deity, and among the most beautiful as they are the most wonderful of His works and laws. Simple in their operation, but yet confounding the wisdom of the wise, by their very simplicity, the mind soars away from the creature and loses itself in a delightful contemplation of the creator, for order implies law, and law a lawgiver, and the more perfect and harmonious the law, the higher we exalt its framer.

The graceful movements of the living hand, add a charm to oratory, and give force and impress to sentiment, but there is a mute eloquence in the dead hand, as it lies before us, more powerful and instructive by far, as it teaches us the solemn lesson of our own mortality. And it may be that as we view its intricate anatomy, the disembodied spirit which once directed its movements is now permitted to watch ours, and be the messenger and scribe who is to write the record of this hour

in a book, whose pages you and I, and all men, will one day see unfolded.

The manner in which the movements of the hand are induced, is very simple, very singular, very beautiful, and yet infinitely intricate and inimitable. To appreciate even approximatively the modus of its induction, a few general facts must be borne in mind.

The different structures of our body, are endowed with an appreciative property, which, by common consent, is designated irritability. It is that property through which causes produce effects, and hence we find that as in social life (excuse the illustration, fair lady), the mere mention of a name, may cause the red blood to mantle on your cheeks, while others only smile at your susceptibility, so in physiological affairs, to use a vulgarism, that which is one organ's food is another's poison, or what will excite the irritability of one, may fall inoperatively upon another, or to reduce our simile to the hand, we will find that in one case, the stimulus of a foe in sight, will clench the hand and raise the arm to an aggressive posture, while the same stimulus applied to another, will act — not upon the hand — but the heels.

Again, witness the little infant, just as a few rays of intellectual light have beamed in upon his soul, numerous enough, and bright enough to teach him what candy is. His little hand is reached forth further and still further until he grasps the sought for object, if it be not too hot, and then he proceeds to test by taste, its qualities. But suppose that candy were burning hot; before the tiny fingers came in contact with it, the muscles would contract and withdraw those innocent little members from it.

As certainly as the well bred man of honor recoils instinctively from association with dishonorable men, though they be his peers professionally — as certainly as the truly virtuous woman recoils from the presence of the vicious, even though they be intellectually giants, so certainly do our healthy organs resent the presence of corrupting stimuli. God! Nature! Providence! Life! As you will — at any rate, that guiding, controlling preservative, invisible power which is displayed throughout organic life, and which is beautifully active in the simple illustration of the infant and his candy, is active always

through specific channels, and as in the motions of the heavenly bodies, the laws of centrifugal force and gravitation are displayed, so in the illustration given, we find those which control the nervous system equally apparent, and both are alike the instruments of Almighty power. The single particle of sand is as wonderful when philosophically studied as an existing fact, as the aggregate numbers of the same which make up the great mass of the universe. Let me not, however, digress too far, or wander too freely through the fields of nature because of their fascinating beauties, but rather limit myself to such as appertain to the theme of the occasion.

The nervous system then, in general terms, may be compared to a railroad route and depot; the former having (as all should have) a double track. One of these conveys the mandate from the depot outward to the termination of the track, the other brings messages from these terminations to the depot. At this depot too, there exists a double power, that of appreciating the value and importance of the messages received, and that of sending immediate answers. This illustration might be still further and faithfully extended—for messages might arrive, the answers to which would involve the issues of life and death; these require to be answered instantly, and in regard to them, there is no time for consultation with the president, and hence a subordinate or vice-president should have power to answer such. Now as to the application. Whatever part of the nervous system we examine, will be found to belong to either of three portions—the fountain, or center, or depot, as the brain, spinal cord, or ganglionic centers, which at once originate force, and receive impressions—the outgoing track, or motor fibres or white matter, which conveys the mandate, or the incoming track, or sensitive portions or cineritious matter, which brings the messages from without.

The nerves which come under our observation in examining the hand, are nerves from the upper portion of the spinal cord, and each filament, however microscopically minute, is a compound nerve or double track, composed of an afferent and efferent part—a part which conveys impressions from without to the depot at the cord or brain, or from those centers to the peripheral extremities of the outgoing part. The spinal cord is not the head-quarters of these routes, it is subordinate to

the presidency of the brain, and often, very often, acts without consulting that important organ. As the child stretched forth his hand to grasp the candy, he did so because there generated from cerebral action guided by volition, a mandate which was conveyed along the outgoing track and acted upon the muscles, whereas in the other case, that wherein the candy is hot, the brain is not consulted, there is danger, and no time for consultation; therefore, the spinal cord takes instantly the responsibility of acting, and so soon as by the incoming track or gray matter or sensitive portions, danger is announced, so soon it issues orders which are conveyed by the outgoing track or white motor fibres, and these acting upon the muscles cause their contraction, and through this contraction the consequent withdrawal and preservation of the part.

If we were to pursue this subject we would necessarily be led into the labyrinths of physiological science, and in order to extricate ourselves, might find it necessary to explain the nature of this connection in the one case, and independence in the other; we might have to show that the muscles have a contractile power which is inherent, and which may be destroyed by certain poisons, so that the most healthy and energetic nervous action could not arouse them; and again, that other poisons will destroy this nervous power although the muscles retain their integrity. We might have to show that the breaking up of the incoming track would cut off all communication with the depot, so that it could not receive intelligence from without, and yet could send commands by the outgoing track, or that the latter might be broken up so that no message could be sent out, while all could be received so long as the incoming one remained intact; but these are questions to be discussed and understood hereafter; their consideration would be irksome now, and I must needs pass on.

As an organ of prehension, the hand, if considered in its abstract anatomy and powers, is infinitely inferior to the prehensory organs of multitudes of other animals, and yet as a prehensory animal, all others are subservient to man. This power was ordained of old, and is not resident in the hand, but in the hand's director. It is less absolute than it once was, but will be restored when the lion shall feed peacefully with the lamb; when the weaned child shall play on the hole of

the asp, and the sucking child shall place his hand on the cockatrice's den.

One animal is provided with an apparatus by which it is enabled to make rapid rotary motions in the water, thus creating a vortex in which its prey accumulates. Another is provided with long floating tentacles, adorned as a variegated shrub or plant. Another displays its attenuated gills, glistening in the gorgeous colors of the most beautiful flower. One is provided with a suction apparatus in which a vacuum is formed, a means at once of locomotion and prehension. Another presents a beak and talons. The lips, the mouth, the tongue of others, the snout of the hog, the horn of the rhinoceros, or the trunk of the elephant, or the claws of the sloth, with thousands of other examples which might be given, evince a similarity of uses which evidence a unity of design, each organ being adapted to the requirements and organism of its possessor, and each perfect in the performance of its various functions.

The hand of the sloth is not constructed upon symmetrical lines of beauty, and as he trails along the ground his despised frame, we look upon his conformation contemptuously, and almost wonder at his existence; but when in his own sphere, he clings to the bending branches amid the sweeping of the hurricane, and sports in the storm, while the plumaged bird hides with fear, or wildly screams and drifts through the air, and the cowering lion quakes at the sound of the crackling limbs and falling trees, we are induced to conclude that his provision too, is in perfect consonance with his requirements, and that he too has his gala days, and times perhaps of pity for those deficient in the protective organs which he possesses. Like the sailor, who, when the howling tempest rang its frightful requiem through the naked shrouds, while the vessel leered with piteous groans to the upheaving waves, mourned for the poor devils on shore, so he sings his laggard chant through the tempest, and at every cradling sweep of the wind tossed branch he clings to, sighs for the poor creatures below.

The position in which the human hand and arm are placed, as regards other organs of the body, is in accordance with their uses, and designed to be where fewest obstructions could impede or arrest their motions; and in our early and depend-

ent infancy, such are the beautiful provisions of Omniscience, that we are kindly cradled in our mother's arms, and it may be that as she contemplates the charge bestowed, and the responsibility it involves, she herself is drawn into closer commune with the source of life, and that the prayers she utters, are echoed through the halls, whose foundations are of jasper, and sapphire, and chalcedony, and emerald, for a mother's prayers are the moral centripetal powers, which preserve us from destruction.

Is nature then unwise in closely thus cementing the dearest of all earthly ties, the union between a mother and her child? Is there not design in thus abstracting her from other cares, while she performs the first of a mother's duties? And is not the hand dignified by being made the humble instrument, by which we are brought to enjoy her sweet embraces? A field opens before our view, which we may not now traverse. The theme, the time, the circumstances which surround us, restrict our observations and demand alike, variety and brevity.

Turn, then, from the mother to the child, and watch the little tiny hand, speaking its own language, a language which a father *understands*, but which a *mother* only fully can appreciate, and as it describes its own self-satisfied gyrations, oh, look into that mother's thankful heart and read the record, "Thou hearest prayer." And then wait a little longer—a few more beams from wisdom's sun have entered in the mental chamber, and the little hands are first to tell the story, as sweetly they extend to give the father welcome.

Time glides on, and with its passage, new developments; the infant speaks another language; the *voice* is heard, and action suited to the voice, slaps mother's face, or with a scream pulls father's whiskers.

We pass the days of sugar-stealing and marble-playing, with all their various innocencies, and come to adolescence; the boy man thinks he is full grown, and every pretty girl he sees (and nearly all of them are pretty) he sets his arm akimbo. Still a little while, and fortified by a single hair upon his upper lip, it is not now his arm he offers, but his *hand!* To keep the child from falling, think you? To have you lift him on a chair? Not so, but that you may accept the half-grown gift in holy matrimony? The girl-woman smiles and whimpers,

and with her finger in her mouth, suggests that she will ask mamma. Now gallant thoughts rush with heroic force upon his brain. Would that some accident might befall—I care not if a thousand should perish, so that I could rescue my Dulcinea del Toboso. Oh, that the devouring element might rage around her, that Eneas like, I might bear her off in safety. Oh, that she were lying prostrate, midway between two worlds, despaired of, and parted with by friends, that I might come and by a magic grain of something, restore her, and so claim her for my own. Oh, that—that any thing desperate and dangerous might afford an opportunity of showing my power, my capabilities and *love*—and while thus musing, a little nigger comes to break the charm with, "Massa John, Missus says she's done told you twice to come to supper, and if you don't she'll lick you."

Sword of Damocles descend! Was ever heard such rudeness from a mother?

Next arrives a period at which the hand again speaks a language which the tongue could not utter. In the buoyancy of youthful hopes and high ambition, when there seems but one thing needful for the consummation of your joy, when the past is as discordant sounds, and the future already breathes its Eolian strains, and you seek another hand to touch its chords; when all desires, and hopes, and aspirations, center in thoughts of its possession, pray how will you lisp your story? Vainly you essay to tell your love; constriction seizes on your chest—your lips and tongue are parched—the ghost of Burke is on your throat, and you look—a model for an artist. But gently taking her sweet hand in yours, you make a little, just a little pressure, not too great else you destroy the whole sublimity, and realize that she is mortal, and when she responds by like manipulation, she's the angel, you the ass, and like your prototype, you look at her and speak. But suppose you had no hand in such emergency, true you might wink your tender story, but then some of the most delightful moments of your life would be robbed of more than half their ecstacy.

Again, we observe man at a period when life has shaped itself in cold realities, and the illusions and delusions of youth have well nigh passed away; when he reverts to his childhood and boyhood, as to a phantom, happy enough for those eras,

but only to be smiled upon now. His hand is upon the plow, and eager, anxious in the pursuit of that which is as ephemeral as the chimeras through which he had passed. Sunlight and starlight look upon his labors, and his hand is busy to acquire a shining bauble, a trinket toy, which often brings disquietude and discord, but more often still, breaks and scatters in the handling. Presently we see this same hand leaning tremulously on a staff, lank and wan in emaciation's waste, yet faithful still, and still supporting. Yet a little while, and it lies listless by the side, cold in the clammy sweat of death, and next affords the worms a scanty carnival.

Such is its brief history, such its phases, yet it performs a most important part in life, and that part we will now examine.

Some years ago, chronology don't tell precisely when, there walked alone and solitary, a man erect in stature and in soul. His hand had done no evil, and as he mused on flowers and trees, and running waters, we may assume he held sweet converse with the God of nature. But he did not long continue in his solitude. It was not meet that he should be alone, and so woman was formed to keep him company. Had she been armless she might have been harmless; but as it was, she had an arm, and put it forth and took an apple, and her whole posterity can't digest it.

The next hand of which we read, is one in direct descent, and with hereditary failing—'tis that of Cain, who with it, slew his brother Abel. Assuming now what indeed we must assume, that we are of Cain's offspring, for Mehujael was his great grandson, and Noah's great grandfather, we see why the stain remains, and the hereditary predisposition manifests itself on every slight occasion.

It may be instructive just here to state, that fifteen hundred and seventy-one years before Christ, the favored writer of the Pentateuch, and indeed after him, all Scripture writers speak figuratively of the hand in various and beautiful connections, showing that the gesticulations of that organ were expressions of the same feelings which now direct its use; for example, the familiarity implied by leaning on one's hand—lifting it up in taking an oath—giving it to another in token of peace and friendship—beckoning with it to call or command silence—placing one on your right hand, as a place of honor—stretch-

ing them out as indicative of mercy, or in blessing—laying them upon others as in ordination and confirmation, and many other illustrations which might be given.

A thousand lords, brought together by common sympathies, spurning the restraint of supernal power, and madly mocking the majesty of Him "from whose right hand goeth a fiery law," once held together a common revelry. The temple was defiled, and its golden and silver vessels sacrilegiously appropriated to the use of impious men, their wives and concubines, who madly mirthful in their unbridled blasphemy, drank wine therefrom, and blindly praised the gods of gold, and silver, and brass, and iron, and wood, and stone. But suddenly the scene is changed, tongues are silent, knees smite together through fear. Belshazzar's heart is troubled, his countenance is changed, and wildly he cries for the astrologers, the Chaldeans, and soothsayers. And why? Because that there had come forth fingers of a man's hand, which had written over against the candlestick, upon the plaster of the wall of the king's palace, "Mene, Mene, Tekel, Upharsin." We may well conceive of the consternation with which the cold, pale, terror-stricken multitude gazed upon their attenuated and bloodless form, as directed by an unseen hand, they made their brief but fatal record.

We might here expatiate, but I will merely ask your attention to two striking passages in reference to this organ, either of which would furnish an admirable text for a series of discourses. "Jehu said to Jehonadab, Is thine heart right, as my heart is with thy heart? If it be, give me thine hand; and he gave him his hand."

The conventionalities of life, sometimes seem to require that we should extend this evidence of peace and good fellowship, even when the heart would withhold it; and we would infer from the question asked, that there were deceit and guile in those days also, and that the offer of the hand was not a certain index of the passions of the soul then, any more than it is in these latter days, when men so often smile and meet you, and turn and smite you.

The other is by St. Paul, and evinces a knowledge which we might profitably comment upon, if time did not forbid. In speaking to the Corinthians, he says, "The eye can not say to

the hand, I have no need of thee." We know indeed, that our ideas of form and distance are materially aided by the sense of touch, and what that sense has measured, the eye appreciates most correctly.

Our ideas of solidity would be very imperfect, if it were not for the sense of touch, while that of sight might enable us to comprehend length and breadth. This has been exemplified in more than one case, in which surgery had given vision to the blind, who had been perfectly familiar with a cube, or sphere, or pyramid by the sense of touch, but had not the power to recognize them as such, by the sight.

It has been said, that each and every sublime thought or expression which have been given to the world, as emanating from man, have their texts or origin in holy writ. It might perhaps, also be said, that every appliance of mechanical force now employed, and every varied apparatus used for its exercise, and the increase of its power and velocity, as the lever, the screw, the fly wheel, or the wedge, the ball and socket, the wheel and axle, and the hinge, the cylindrical in preference to the solid rod, the curved in preference to the straight, have each and all of them, their prototypes in the machinery of man, and that he epitomizes in his construction, the principles of all the multifarious appliances of power, patented or used in life, whereas, above and beyond all these, the stimulus which excites his force, has means of passage for the acquisition and increase of its velocity or power, which man's inventive genius will ever fail to imitate.

How idly by us, pass the whistling cars, as madly they speed on their way, belching clouds of smoke and steam, lighting up the air with burning cinders, and strewing the track with ashy products of their power. But whence the speed they have acquired? Whence the origin of the power by which they are propelled? And the answer to these inquiries tells us also, how man walks or speaks, and how too he is able to look upon their mad career. Both are alike supplied, both burn fuel—heat is evolved in each, and ashes is their common product; but there exists this difference, that in them the burning of their fuel produces an expansion upon which their motion is dependent, while in man the fire produces contraction, and motion through contraction. In each however, motion is generated by the

same active agent, oxygen. But there is in man, a dual action, as beautiful as it is incomprehensible, by which the muscles which are the antagonists of those through which we design to exert force, are relaxed at that imperceptible and inappreciable point of time when a stimulus acts upon the former, and who ever will watch the rapid movements of a musician's fingers, in the execution of some of the more difficult pieces of music, can not but wonder at the infinite perfection of the machinery which conduces to such results, for every muscle acting, has its antagonist, which must act in unison or concord, and in its turn prepare to give additional power to its opposite, for a muscle's maximum of force is best attained, when its antagonist is somewhat active, as woman's powers are rendered most apparent by a little opposition.

We find again, that in both, this force when generated, is controlled by apparatus adapted to the end desired, but the machinery of the engine is fixed, and consequently the power always acts in the same manner; whereas in man, the machinery is movable, and can be guided by volition; thus the rotary motion at a ball and socket joint is stayed, and its arm becomes a lever, and the fulcrum changes its position, and hundreds of muscles with millions upon millions of fasciculi, come to aid with their accumulated power, and so the mountain moves.

The fireman throws carbon into the furnace, in the form of wood or coal, the oxygen of the air consumes it, and heat results from that consumption. We consume our own food and relish the multifarious forms in which we find our carbon, but still whether it be bread, or meat, or oil, or tanglefoot, we must have it, or else our running-gear will stop all motion. This carbon is consumed in us, as in a furnace, the oxygen having access to the minutest parts of our body by using the arterial blood to ride upon, and to those from which the greatest activity is demanded, is most distributed. Look therefore at the hand, and see, not only the beautiful arrangement for the distribution of this blood, second only to that which is perceptible at the brain, but also the liberality of the supply which it receives, and ask your maker through all his works, interrogate him through the whole animal kingdom, and its minutest parts, and tell me from analogy, whether he designed the hand for work or idleness. Compare the calibre of its

vessels with that of the aorta, and say what proportion of the seven tons daily it receives.

You might also in this connection, examine its firm, hard covering, and the cushioned mass beneath, and learn from this arrangement that other duties were designed than lolling it upon a lap-dog, decorating it with tinsel, or bedewing it with cosmetics.

Do not infer, gentlemen, that I would have fair woman's hand at menial work; but for her own and society's sake, I would not have it idle. There are ten thousand ways in which it would appear more beautiful, than wrapped in kid or ermine. I have seen it on the forehead of the sick, lighting up the saddened soul with a beam of placid gratitude. I have seen it smooth the pillow of the dying, when the last ray of departing intelligence fell upon it with an unspoken gratitude which seemed as if it would say, "I will remember thee in Paradise." I have seen it opened to the poor and needy, whose matin hymn and vesper prayer lisped in the ear of God their thankful psalmody. I have seen it culling flowers wherewith to wreathe a garland for the dead, and planting cypress by the tomb.

Accuse me not of any desire to detract from her just dignity, or diminish the proper reverence which is due, when I intimate that I do not conceive her to be compromised when "she layeth her hand to the spindle, and her hands hold the distaff," when "she stretcheth out her hand to the poor, and reacheth forth her hand to the needy," when "she looketh well to the ways of her household, and eateth not the bread of idleness." Nay, rather do I concur with the wise man in esteeming such a one as of a price far above all rubies, and I doubt not, that if there were more of such among us, there would be a diminished tendency to that physical degeneration which is becoming too apparent in our land.

If we cast a retrospective glance at those nations whose boast was their simplicity, we will find that so long as the hand was employed they prospered, but so soon as a false pride began to frown upon honest industry, so soon they declined, and as an example, see how comparatively pitiable a page Rome fills in the present history of the world.

I need not remind you how beautifully Pliny alludes to the

fact that the most honorable of her citizens and generals were among her most stalwart workmen, and how, in alluding to those of them who were agriculturalists, he rises into poetic sublimity when he speaks of the earth as if honored by tillage from such hands, yielding abundantly and seeming herself to glory in her own fecundity. These were the days of Manius Dentatus, and Cato, but they were soon followed by days of luxury and effeminacy; and a writer in the time of Tiberius said of the ancient city, that he saw there, "schools of philosophers, rhetoricians, geometricians, musicians, and what was more astonishing, of people solely employed, some in preparing dishes to whet the appetite and excite gluttony; and others to adorn the head with artificial curls, but not one for agriculture."

A nation's decadence will date from a nation's idleness, and her fall will ensue when her artizans fail to be honored.

A natural transition from agriculture was to architecture, for as the former was man's first occupation, so the latter was naturally that which first succeeded it, as necessity demanded that man should seek shelter and covering which were denied to him in his natural state. Hence, in primeval periods, we find that branches of trees were constructed into rude and badly covered tenements. These were succeeded by such as were covered with clay, or thatched with clay and straw. To these succeeded such as were made of wood, and next of brick on solid foundation, covered with wood boards or tile. Soon however, we find ornament and splendor, grandeur and magnificence, as developments of architecture manifesting themselves and cumulating in luxury. The former days were those in which the man was the ornament of the house, the latter those wherein, as now, the house is the ornament of the man.

In regard to ancient agriculture, we have not been left without a written record, for kings and princes, generals and philosophers, delighted not only in its practice, but were careful to note its precepts—the works of the Carthagenian General Mago, alone, numbering twenty-eight volumes. Hiero, Attelus, Cato, and among the philosophers, Plato, Zenophon, and Aristotle, have left their precepts noted for posterity; but it is not so of architecture, at least of Grecian architecture, which may be said to be the Asiatic and Egyptian perfected.

Although, however, we have not a written history of Grecian architecture, and the perfection to which it attained, we have an unwritten and majestic record in the obelisks and pyramids. In sculpture and in painting too, we are linked with the past, and the past with us, by handiwork, for mental conceptions, however grand, are but self-satisfying until the hand takes hold upon them, and makes a register for others.

These ornaments of the past, however, tell not only of man's mental improvement, but they convey other lessons for our instruction: thus, as we again turn our eyes Eastward, and view the Egyptian pyramids, some of them measuring nearly half a mile around their base, and eight hundred feet in height; when we read that one hundred thousand men were constantly employed on one of them; that ten years were spent in Ethiopia and Arabia, hewing stones and conveying them to Egypt, and that twenty years more were occupied in placing them where they now are, we are struck with wonder, and in our admiration of the grandeur of the architecture, we are apt to forget its worthlessness.

We too, have our pyramids, not many feet apart, and a little wire stretching between them, and these in their simplicity bear a nobler record far, of man's advancement, than the labyrinth and lake of Mœris, a more wonderful structure still than the pyramids, for its twelve magnificent palaces communicating with each other, and their fifteen hundred rooms and terraces, with a corresponding number subterranean, while showing the Egyptian taste for architecture, display also a moral degradation, which seems inconsistent with such development; and when we read that these gorgeous subterranean rooms were the receptacles of crocodiles, which the builders worshipped as gods, we must conclude that man is a strange paradox.

The most *important* record which a nation makes, is *written*. As soon as tradition is invaded by the pen, the superstitions naturally associated with it, lose their force, and thus are the gates of knowledge opened. Experience next improves the written law, detaching what is useless or injurious, and so the pen becomes "mightier than the sword." We might profitably refer to some over whose ashes the suns of many centuries have arisen and set, and observe the prominence at which their philosophy placed the hand.

He who "preferred a grain of wisdom to heaps of gold"—who, when he was condemned to die because of so-called impiety, laughed and said that the sentence had long since been pronounced against him by nature—he who, "when he was asked by the people of the place at which he died, whether his body should be carried into his own country, answered, No! as the road that led to the other side of the grave was as long from one place as the other." This philosopher, unacquainted with the beautiful anatomy of the hand, but observing its varied uses, and seeing that by sculpture, and painting, and writing, it was establishing monuments for all ages; and by building and weaving, was cementing the bonds of civilization and promising a universal brotherhood, ascribed to it an importance to which it is not entitled, for, because of its possession, in his view, and in that of multitudes who followed him, man was at the head of creation.

We must not, however, ridicule or carelessly eschew this proposition; for arguing from a negative, so far as we can thus argue, without it, our race would have been long since blotted from terrestrial existence. Destitute of covering to protect against the elements, unable to provide himself with shelter, unable also to obtain his food, being less fleet than the animals which surrounded him, man would have become their prey, and having no means of defense, the most insignificant of them could sport with and annoy or feed upon him. No communication with his fellow, except by locomotion, no whistling cars steaming by his door, no vessels to plough through the waters, not even a horse to ride upon, for without hands he could not subdue that noble, graceful animal, how miserable, how below the very insect tribes would man be placed in creation's scale; and although we find him now the lord and and ruler of animals, to whom was given "dominion over the fish of the sea, and over the fowls of the air, and over the cattle, and over all the earth, and over every creeping thing that creepeth upon the earth," nevertheless we must not turn slightingly from the belief of Anaxagorus, but rather inquire, whence this beautiful and useful organ derives its utility and power—how was it first employed by builders of tents, and artificers in brass and iron, and manufacturers of the cornet and dulcimer and harp? Whence arose those Gothic

spires, which followed by the eye and thoughts, lead from their base on earth, by gradual and beautiful gradations, toward heaven, thus elevating insensibly the soul, and leading it from the rude material below, to the sublime immaterial above; and our inquiries will lead us to determine that there is another organ more potent still, from which the hand derives its power, and then another, without which the first which it surmounts would be inactive; and then a fluid requisite to this latter, and without which it too would be powerless; and then upon interrogating this fluid, we will find that it requires both food and air. Thus is the hand linked inseparably with conditions which we can trace, but not divine; for there yet remains a power invisible, intangible, which ever will defy the scrutiny of man until the judgment of the great day. The air, the blood, the spinal cord, the brain, all seem the same after the eye has lost its luster, and the lips which we were wont to press are cold, and the tongue which spake its loving accents in our ear, is mute in death.

And whence this change—whence this cold, heart-rending change, which parts the mother from her child, the husband from his wife, the lover from his idol? Why does the insatiate grave still breathe its sepulchral solicitation—"give"? and why doth every creature that hath life obey its damp demands?

What is death? Death is a negative condition—it implies the absence of life; and life is abstract, bestowed upon us, or rather loaned for a purpose, and hence to be demanded with interest, at the option of the lender.

I do not propose to enter the obscure realms of psychology, and seek to draw the differential lines between that life which gives to the worm and man alike their vitality; and that other principle, which is immortal, and which we term soul. I am content to know, that death is the inevitable result of life—that results are due to causes—that causes imply power: nor is it an objection to my mind that I have not seen that power. I have not seen the oxygen which is essential to life, nor the hydrogen with which it combines, to form water; yet the actions of these two have demonstrated to my mind their separate and certain existence, and by parity of reasoning my faith in the God of life arises.

In seeking, then, the cause of man's superiority, we must

seek beyond a mere dependency, we must seek for it at the point upon which that dependency is pendent. That point is clearly intimated in this, as it is exemplified through the whole earth: "So God created man in his own image, in the image of God created he him; male and female created he them." Herein is the source of the hand's perfection, and therefore we except to the admission of Sir Charles Bell, who agrees with Galen, "That man had hands given him because he was the wisest creature," as well as to the opposite view, "That his superiority and knowledge were owing to his hands." I do not, however, deem the question one of great importance, for in viewing the position of man in creation, we must view him with all his parts. You might whittle him down, for argument's sake, and after cutting off his legs, show how admirably he was adapted to domestic life, or cut off woman's tongue, snd say how exquisitely she was formed to keep a secret; but it would only be for argument's sake: "For God hath tempered the body together, having given more abundant honor to that part which lacked: That there should be no schism in the body; but that the members should have the same care one for another. And whether one member suffer, all the members suffer with it, or one member be honored, all the members rejoice with it."

The blessings which we enjoy, and which are common to us, we know not of, and therefore do not appreciate until they are diminished or withdrawn.

What are the advantages of the pure air which God has given us—the pleasures of sight—the charms of music, and the caroling of birds—the delights of health—the conveniences and pleasures connected with the hands' motions? Ask him who has breathed a foul and vitiated atmosphere—whose vision has been obscured—who has been restored from deafness—whose shattered form is bending o'er the grave—whose hand lies palsied by his side—and you will receive answers drawn from the soul's experience, and worthy to be read of all men.

We wonder at the magnitude of some physiological phenomena: as, for example, when we learn that the tubules through which perspiration finds egress, measure two miles and a half in length; that seven tons of blood pass daily

through our heart, and are exposed by the nice anatomy of the lungs upon a surface of 1400 square feet, that it may be aerated; that 226 cubic feet of atmospheric air have daily access to these organs; that the actual force exercised by lifting twenty pounds with the last joint of the thumb, while the arm haugs downward, is equal to about three thousand pounds; that a man weighing 150 pounds, who leaps two feet high, exerts a force of three hundred thousand pounds; that the heart at each pulsation exerts a force of more than a hundred thousand pounds. But if these results in their aggregate astonish us, what shall we say of the means by which they are attained, and the beautiful intricacy of the structures which are active in their production. And if we fail to recognize in the immense powers of the living hand, the living God, may not the dead hand, in its mute language instruct while it startles and appals; for its bones and ligaments, muscles, tendons, fascia, tissues, and integuments, nerves, arteries, veins, and capillaries, and all its parts and structures, remain, and yet it lies cold and powerless, a silent index of what our own will soon be. This step from life to death, from mortal to immortality, we all must take, and our duty would be incompletely performed, if we were merely to trace man to his tomb, and not impress upon your mind that the great catastrophe which you will be called upon to combat, and which at best you may only delay, is but a change of life, a mere transition, although we term it, death. I may not pursue the theme, and perhaps it were better taste to speak of bridal robes, and sparkling eyes, and sandaled feet, and jeweled hands, and leave the grave, and the worm, and the winding-sheet, to others; but you must excuse me, gentlemen, if throughout my whole course, I choose rather to consult what I conceive to be my duty and your improvement, than your taste. If taste alone were to be consulted, the most solemn, instructive, and important themes, would never be discussed.

About five hundred years ago, a young man, of whose previous history we know but little, while strolling carelessly through the woods, and possessed apparently of a propensity which is one of our national characteristics—tired, it may be, from his rambles, and as thoughtless as he was tired, sat down and amused himself by whittling—not nutmegs, but letters

from a beech-wood tree. These he afterward marked with coloring matter, and found that thus he could leave their impress on other substances. He desired to retain the secret and profit by it, but unfortunately for himself, confided it to a workman (not a woman), who improved upon the original, and with another, so arranged the letters as to enable him to print from them. In a short time afterward, we find that a few copies of the Bible were exposed for sale in Paris, but the uniformity of their appearance excited the superstition of the people, who thought they had been produced by witchcraft, and soon a work of destruction to the books and extermination of the possessors was determined upon, but evaded by flight.

The great matter, however, which a little fire had kindled, was not thus to be subdued. The smouldering embers burst forth anew with volcanic energy, and to this day pour forth their vivid lava, enlightening the world, and shining forth their bright effulgence upon the open gates of the Everlasting Kingdom. In forty-six languages of Europe, in forty languages of Asia, in five languages of Africa, and in twelve of America, we to-day have the Holy Scriptures, or parts of them, translated and printed.

Not three hundred years ago, a little boy in Holland, whose father was a spectacle-maker, amused himself by holding up two glasses and looking through them. Thus he discovered a church spire apparently reversed, and larger and nearer to him than it really was. His father noticed the fact, and adjusted the glasses on a board, so that the distance between them could be arranged at pleasure.

Galileo heard of the circumstance, and behold the results! Jupiter and his moons, the sun and his spots, the moon and her mountains and valleys, and myriads of stars, were brought before the eye of that great philosopher, and a basis of Astronomy established which unfolded in new splendor the glorious majesty of the heavens, and enlarged our conceptions of Him "whose glory is above the heavens," and to whom they are as the grains of dust beneath the foot of man.

Consequent upon the same seemingly accidental and trivial occurrence, and as a sequence of the telescope, we have the microscope, by which we are enabled to determine that every particle of matter, however minute it may be, has definite form

and order, whether it be the dust on a butterfly's wing, or the minutest animalcule perceptible by its most magnifying power. And so we are enabled by these two instruments to admire an infinity of Nature's works, hidden to the naked eye, measuring the largest planets on the one hand, and beholding in a single drop of water, on the other, nearly as many inhabitants as there are upon the whole earth.

But a few centuries ago the science of Navigation was confined to a knowledge of the coast and a few stars, and thus the Phœnicians and Carthagenians crept closely along the shores, or only ventured from them in the blaze of day, or an unclouded night.

The property of the loadstone was known, but the marvellous property of the magnet remained to be discovered by gradual experiments; and it is singular that the priority of its application to the compass, should be alike claimed by the Chinese, Italians, Venitians, French, and English, and also that history should be unable to solve the matter.

The perfection to which the science has now attained, and the immense results that flow from its accuracy, are fitting themes for philanthropic thought and christian contemplation. While some were occupied in idle mirth, and others with awe-struck superstition gazed upon the floating figure of a mermaid or a bird, as it floated on the surface in apparent obedience to the command of the necromancer, but actually to that of the important law of attraction, for the magician's wand was tapered with a loadstone, and the images were tipped with iron—how little thought they, that some were watching over them with philosophic eye, to make an application of the facts to science. How little did they dream, that from their experiments, continents, seas, and islands, were to be born to the world, or that thirty millions of a free and happy people should this day be found, as one result, worshipping God under their own vine aud fig-tree, and chanting their political hallelujahs beneath the star-spangled banner of our country.

Infidel, atheist, scoffer, skeptic! are you here? God forbid! But if you be, what answer will you give when interrogated as to these mighty issues? Accidental, say you? The results of chance? The natural effects of natural causes? What say

you of the words of the Almighty, spoken through his prophet seventeen hundred years previously: "From the rising of the sun even unto the going down of the same, my name shall be great among the Gentiles; and in every place incense shall be offered unto my name, and a pure offering: for my name shall be great among the heathen, saith the Lord of hosts."

Surely there is a direct connection here, and these are means and instrumentalities for the accomplishment of his purposes as indicated, and the fulfilment of his glorious promises. But it is not my province to expatiate upon or multiply such self-evident propositions. I introduce them as illustrating the fact, that the hand is in them the honored instrument of God's power.

Well might Scripture uphold the dignity of manual labor, but sadly is it perverted in a too common construction of the curse: "In the sweat of thy face shalt thou eat bread, till thou return unto the ground."

With deference I would submit, that one of the greatest errors we commit, and one of the most fatal for our own and our children's peace, is this very misconstruction which leads to the belief that God designed labor as a curse, and that it is imposed as a consequence of the fall; whereas, previous to the fall, man "was put into the garden of Eden, to keep it and to dress it."

Let us teach our children to look on the bright side of life, and the beauties of the world and the loveliness of nature, and the beneficence of God. Let us teach them what man should be, rather than what he is, and so will we elevate their thoughts and their actions, which a false theology tends to depress and degrade.

Man—God's master-piece of workmanship, the express image of his person, the glory of his Creator, for whom all else was made—is, by much of the pulpit declamation of the day, transformed into a degraded outcast, occupying in his Maker's eye, a lower position than the brute creation which surrounds him; thus forcing the first reasoning powers of youth to ask, "Why hast thou formed me thus?" and to conclude that it would have been better if they had not been born.

Man is a triune unity, a glorious trinity, an incomprehensible reality,—one, in himself, real, tangible, physical: two, in the superadded organic life which he possesses; but three, in

the God-like and immortal soul, which is his, and which binds him to time, millions and billions of years hence; and then as far in prospective, and so on, with unending and undiminishing vitality, co-eternal with the Divine Creator,—and yet, these three are one, and concentrated with triune beauty, and triune intricacy, and triune responsibility, in man.

Oh! turn away from the world's shows and pleasures, and errors, and hopes, and dreams of ambition, and center thy soul and thy soul's thoughts upon what thou art, O, man, and upon what thou may'st be,—and for an hour, say to the flesh, Be still; and to the spirit, Commune with me;—and see the beautiful as it comes in from the past and the present, and unfolds its dazzling beauties for the future, and tell me if thou wilt, art thou not immortal? Is there not another sphere, higher and more glorious far, than this, to which thou may'st attain? Are not the life of the body, and the death of the body, but subordinate to the spirit and its enduring essence? Answer! Not from a stupid fear, lashed into you in early childhood—not from a coward sense of future pain, made worse than possible by ranting declamation—not from the disordered operations of a mind acted upon by these two or either of them modified:—but from your own communings with yourself—from the solutions of your own self-imposed problems—from things as they are, viewed in reference to the question, Why are they?—and tell me, if you are not thoroughly convinced, that as certainly as the expansive power of steam will remain the same after all present channels of its application are destroyed, so certainly will your spirit live after your hand is paralyzed and other hands have screwed down your coffin lid, and lowered you to your mother earth, and the remembrance of your name, and every known vestige of your existence, have been swept away.

Physicians in the United States.—In Massachusetts there is one physician to 605 inhabitants; in New York one physician to 610 inhabitants; in Pennsylvania one to 561; in North Carolina one to 802; in Ohio one to every 465; in Maine one to every 884; and in California one to every 860. The whole number of physicians in the United States is 40,481.

CORRESPONDENCE.

SCHOOL FOR IMBECILES.

I do not think, Mr. Editor, that any publication has ever been addressed to the Physicians of Kentucky, in regard to the true character and interests of the School for Imbeciles, established by act of our last Legislature, located at Frankfort. If you will allow me the space, I wish to attract attention to this Institution, so that its objects and the scope of its benefits to a numerous class of society, shall not be either misapprehended or misappreciated.

I am convinced that the opinion very generally prevails, that this Institution is to be an *asylum;* a house prepared for the restriction and protection of those unhappy creatures whose defective intellectual development deprives them of the use of those faculties whose exercise is necessary to the performance of even the ordinary proprieties of life; and in accordance with this idea, the most completely helpless and hopeless cases of idiocy, are those most apt to be recommended for a place in the institution. This erroneous opinion of the designs of the institution, should be corrected; it is not to be merely an asylum, but a school, a place for learning; as wholly such, as Center College, or any other institution of learning in our State. I might indeed go further, and say that its judicious and successful management requires a higher exercise of skill and sagacity than the control of our best institutions of learning. In the latter, the teacher finds fertile fields ready at once for the germination of the seed he is to plant; in the former, nothing but the highest degree of skill, patiently and assiduously applied, can be looked to, to fructify the barren soil from which he solicits a return.

The idea of educating idiots at all, is of modern conception. It has been but a few years since the remark was made, that "none but fools would think of educating fools." Philanthropy and science, not discouraged by the bitter taunt, labored on in their efforts to discover the means of access to each feeble spark of intellect which still flickered in the darkened minds of imbeciles, and in many instances succeeded by patient toil, long nurturing, and much trimming, in kindling the hidden

sparks into lamps whose brightness lighted with intelligence the formerly cheerless countenance of their pupils.

I have an abiding faith that similar success will attend the exertions of the competent and earnestly working gentleman at the head of the school for imbeciles, at Frankfort; but at present, he labors under peculiar difficulties, in initiating the enterprise. The building not being in such a state of forwardness as to receive pupils, he is enabled to admit but few, and even these few are not favorable cases for determining the practical benefits of the institution, being in most instances, the subjects of epilepsy to such a degree that Dr. Rodman finds that his first attention must be directed to the control of the disease rather than to the development of their intellect.

These remarks have been suggested by a recent visit to this Institution, and observing for myself, the principal of the school, in his relations of physician and teacher; and it then occurred to my mind, that it was important for the members of the medical profession to be informed of its true character and designs, as well as of the quality of material best calculated to test the value of this system of education, since it is through them that recommendations for admission will principally come.

I have no doubt, that after the building is completed, Dr. Rodman will desire to accommodate all imbeciles who are referred to him, except those of the very lowest class, who are indeed, mere organisms in human shape, in whom the brain and nervous system have no command over the voluntary muscles, and who are consequently without power of locomotion, without speech, and without any manifestation of intellectual or affective faculties. Such as these, may be regarded as insusceptible of education, and should not be recommended to a place for instruction. Then epileptics are not well calculated by the evidences they exhibit of improvement, to give any great encouragement to the friends of the enterprise, since it may at any time happen, that a single convulsion may interrupt or entirely destroy the proofs of toil and mental development of many months. It is well also, to bear in mind, that until the building is done, those imbeciles who are under the control of depraved or brutal propensities, can not be placed in such positions of safety and surveillance as their conditions require.

Physicians who have imbeciles within the limits of their observation, should correspond with Dr. Rodman, and after stating the degree and character of mental and moral development they manifest, will be advised in regard to the terms of their admission into the school. B.

WOUND OPENING INTO THE KNEE JOINT, SUCCESSFULLY TREATED.

By E. RICHARDSON, M.D.

As wounds penetrating the knee-joint are often productive of great constitutional disturbance, and followed by serious results, the following case of successful treatment of such an injury may not be without its interest in the profession:

Called to visit C. W., July 27, 1860. He had received a compound, comminuted fracture of the patella, from the kick of a horse, while on horseback, which at the same time completely laid open the knee joint. The wound extended from the outer edge of the right patella, directly across it, and was from four to five inches in length. About one-third of the bone was broken into fragments, so small that their entire removal became necessary. The upper and larger fragment, which was also broken into two adherent portions, was drawn up several inches by the retraction of the muscles. A small, thin portion remained attached to the ligament connecting the tibia. The cavity of the joint was completely exposed, and the synovia could be plainly seen escaping with the effused blood from the wound.

The treatment consisted in bringing the upper fragment down so as to secure it in apposition with the narrow rim below; in drawing the wound together and preserving the juxtaposition of its edge by sutures and adhesive straps; and, subsequently, the cold water dressing—a wet cloth kept constantly applied over the wound, and covered with a dry one, the usual oiled silk covering not being at hand. Quietude and the usual antiphlogistic regimen were enjoined.

Matters seemed to progress very favorably, and there was but little constitutional or local disturbance or suffering, until about the ninth day, when, the wound in the integuments

having entirely closed, there was some pain, attended with evidences of an accumulation in the joint. Upon making a small incision, a quantity of purulent matter was discharged, which gave immediate relief. The wound closed with readiness, and the patient recovered rapidly.

The ordinary bandage from the foot, with figure of 8 around the joint, was replaced after some time by two bands of steel embracing the limb, riveted to a transverse piece of steel beneath, and so bent as to prevent pressure on the vessels, while above they were drawn together by leather straps with buckles, so as to retain the patella between them. This convenient arrangement was suggested by my friend, Dr. Clemons, of Monticello.

From the time of the discharge of the purulent matter, not the slightest untoward symptom was manifested. Union of the fracture was fully effected, and at this date (November 10) the patient enjoys considerable motion of the joint, and has been for some time walking about, with but little lameness.

E. R.

Monticello, Ky., Nov. 10, 1860.

Pharmaceutical Department.

By THOS. E. JENKINS, Pharmaceutist.

QUACKERY.

All discoveries of means calculated to relieve human suffering should be generally known. All whose province it is to prepare or apply remedies, should have the knowledge requisite for their proper manipulation and use, and be enabled to suggest improvements and to combine or separate, so as to adapt them to particular cases. To keep secret any useful discovery in medicine for the selfish purpose of gain, is unworthy of, and below the honorable standard that every physician and pharmaceutist should scrupulously maintain; while the tampering with medicines by ignorant persons, and the manufacture of worthless trash under the name of medicine,

are grades of depravity with which no compromise should ever be made.

In antagonism to all this, Quackery—at once the reproach of medicine and the bane of society, is ever present and ever ready with its insidious arts of mystification and ostentatious wisdom in opposition to the common understanding of right minded men, not only that of persons connected with the regular profession of medicine and pharmacy, but pandering to the weaknesses and prejudices of human nature, manages to deceive and lead astray a large proportion of those who in their infirmities and misfortunes, most need the advice and attention of honest and capable friends.

The monstrous growth of quackery in modern times, has, at least, kept pace with the advancement of the age in arts and sciences designed to benefit, or when State policy requires, more expertly to destroy the human race. It protrudes itself with the most business-like assurance into all classes and circles of society; it is ever present at the corners of the streets and in our dwellings, mixed with our daily news, buying up the easily purchasable public press, which subsists in a great measure upon it, and it promptly makes up all deficiency of fact with brazen falsehood. History, ancient and modern, is ransacked, or even made when it is needed; current events and discussions of general interest—political, moral, social, and religious—are all used as material for introductory paragraphs to the most preposterous eulogies of quack medicines. Many of these literary productions are by a class of scribblers of prose and verse (such as it is), who are not esteemed in any other, and probably incapable of any better employment of their talents, and who hire themselves to write puffs of nostrums they know nothing about. Great names are dragged into base connection with pills, mixtures, lotions, plasters, etc., to give them currency, and fictitious ones are often substituted as most likely to be popular, or perhaps less objectionable than those of the real actors and recipients of the profits. Names too, of all countries and people, are appropriated wherever they can be made available. The poor Indian and the self-inflated Chinese are made involuntary sponsors for things as little known to them as their language or method of treating diseases are to the nostrum makers from whom they receive such unexpected

distinction. Frightful maladies, which, fortunately, are of rare occurrence except in those advertisements, are multiplied to suit the market—detailed with revolting minuteness, and the text illustrated with literally horrid cuts. Certificates of cures, that never occurred, are signed by persons who can not be found, though their story is told with a circumstance of street and number, and sworn to before the mayor or some other prominent functionary—before whom, by-the-way, any thing may be sworn, as he never reads it because it matters nothing to him, yet the appendage of his name helps to pluck the great public goose.

In many cases, medicines in common use are dressed in some insignificant disguise, when "presto!" what had been only simple matter of fact, becomes astonishing, and worth a great deal more in cash; whereupon it is put up in set form with printed envelopes, showing that to bring this wonderful discovery to the point of projection, required, besides a vast expenditure of money, the whole depth of knowledge—all the skill, and, through many years, the self-sacrificing devotion of the wondrous genius that has brought it forth, "without whose signature none can be genuine," said signature being engraved or stereotyped.

New remedial agents, discovered or developed by the researches of the best minds engaged in medical science, are at once seized upon by quacks, as the bases of names for new nostrums, they, forsooth, covering with the slime of their "*compound*" the most brilliant results of learning, which from inception to promulgation would have been as far beyond the reach of their intellect, as above the level of their morals. With parasite meanness they attach themselves to the productions of men whose names will be cherished with honor and gratitude when the whole pack of charlatans are "forgotten as fools, or remembered as worse."

As the wares of these men are got up to entice customers, every popular prejudice must be turned to account; the most petted being one that really exists to some extent, though greatly exaggerated, against minerals and in favor of vegetables. Accordingly, we find this string especially harped upon, a large proportion of quack medicines being named and strenuously declared to be vegetable. There are favorite vegeta-

bles, also, of which the popular estimate is duly encouraged, and of all these Sarsaparilla may be considered the "best abused" root in the Pharmacopœia. Other popular notions are treated with respect in proportion to the demand they create, and from time to time new and marvellous theories are broached, as there appears to be a vacancy in the public mind for their reception. It is propounded by the pill or purging school of quacks that there is but one disease—all that are called by different names being but different forms of it, for which "Universal Pills" are obviously the very remedy.

The universal school comprises more than this class, whose chief mission appears to be to open men's purses by opening their bowels. There are some who do not regard the pill machine as the only instrument of human relief, there being various lights in which the one disease may be considered, according to the nostrum that is made for it; with one it is heat, with another it is cold, with a third both. Again, it is in the stomach, the skin, the nerves, or the blood. Some "Universal Vegetable Renovators" (their very name is nonsense) are applied internally, others upon the surface, but each is declared to be the only medicine that should ever be bought; that no family is safe without it, or with any other; that "all others are base and dangerous impositions," the work of ignorant rogues. This latter opinion appears to be cordially reciprocated by most of the fraternity, and is, perhaps, the nearest truth of any they express.

Other quacks denounce the universal system as unprincipled quackery, and are quite positive that none but a simpleton or impostor ever denies the existence of many diseases; they, therefore, condense their wisdom upon certain specialities, making stories, however, as entire, so far as they go, as any of universal pretensions. In short, the whole system, based as it is upon the ignorance, the fears, and the credulity of mankind in reference to all matters affecting health and disease, is yet so monstrous, so impudent in falsehood, that it would be ludicrous if it were not so mischievous. If its continued presence from the middle ages had not rendered it familiar; if habit had not blunted our sense of its depravity; if it could now be presented, in all its deformity, before a civilized community for the first time—it would be regarded with wonder

at its audacity, and with execration at its reckless tampering with the best temporal interests of humanity.

WILD CHERRY LEAF WATER.

In October, last year, we called attention to the distilled water of the Wild Cherry leaf, as a substitute for the "Aqua Lauro-Cerasi" of the Ed. & Dub. Pharmacopœias, and pointed to the fact that we probably had growing amongst us a plant which would not only furnish us with a very valuable remedy in an agreeable and acceptable form, but also rendēr us independent of a foreign medicament which is often factitious and otherwise unreliable.

Our object has been to collect the leaves of the Wild Cherry tree, at intervals of about a month, commencing in April, and ending about the first of October, comprehending the whole season of vigor in the foliage of the tree.

The process for the preparation of the water, has been the same as that laid down in the Ed. & Dub. Pharmacopœias, for the preparation of "Aq. Lauro-Cerasi," which is to obtain from every pound of the chopped and bruised leaves, one pint of water.

The amount of anhydrous prussic acid obtained from each distillation, is stated below:

Date of collecting the leaves.	Per centage of anhydrous Prusaic Acid contaiued in the distilled water.
April 26,	.0063
June 1,	.0112
July 10,	.0207
Aug. 20,	.0250
Sept. 1,	.0290
Sept. 26,	.0690

These experiments show that the prussic acid forming ingredients of the leaf gradually increased with its age, and that in the latter part of September they appear to be at their maximum, for according to the experiments made in October, last year, the per centage of the anhydrous acid was but .0238, and therefore, to get a water as active as possible, the leaves should be distilled during the latter part of September.

The water possesses the peculiar odor of the leaf in a

marked degree, which to many persons, is a very agreeable flavor. The dose of it, when containing .069 per cent. of anhydrous hydrocyanic acid, would be from 30 drops to two teaspoonsful, and would be equivalent to from 1 to 4 drops of our officinal dilute hydrocyanic acid.

The water should be collected and preserved in small black bottles, completely filled, or a drop of sulphuric acid should be added to every pint. Our experience has been, that excluded from the air and light, its properties are well preserved.

The medical properties of this water, are those of the dilute hydrocyanic acid, a sedative narcotic, and would make an admirable addition to pectoral mixtures and cough preparations, when prussic acid is indicated.

TARTRO-CITRIC LEMONADE (LIQUOR SODÆ TARTRAS).

By Prof. J. Lawrence Smith.

There is nothing new in the use of tartrate of soda as a purgative, and it is only surprising, that once known it ever gave place to the citrate of magnesia, to which there are several objections well known to practitioners. Among these I would enumerate the not unfrequent irregularity of its operation, sometimes not acting as promptly as desired, at other times with too great and continued energy, requiring anodynes to arrest its operation.

Again, owing to the manner in which it is made, and the want of uniformity in the composition of the commercial carbonate and calcined magnesia, the amount of free acid in the solution varies much, when made at different times by different operators, and with different lots of materials—there being sometimes, two or three drachms of free acid present in a bottle, and besides, under all circumstances, the mixture must be quite acid in order to retain for any length of time the citrate of magnesia in solution. Mitscherlich and Bence Jones have made experiments on citric acid, and they consider it a poison analogous to oxalic acid.

Yet another objection to citrate of magnesia is the certainty of its undergoing decomposition, resulting in the deposition of an insoluble citrate of magnesia, a change that takes place very rapidly when the bottle is opened.

With these facts before me, I compounded a preparation of tartrate of soda with lemon syrup and water. (At first I introduced a small portion of citric acid, calling the mixture Tartro-Citric Lemonade.)

It is free from the objections of the citrate of magnesia, is a prompt and certain purgative, without excessive action, and uniform in composition, does not undergo decomposition even after the bottle is opened, even more agreeable to the taste and less costly than citrate of magnesia. It was first manufactured by T. E. Jenkins & Co., and is now also manufactured to a large extent at the Louisville Chemical Works.

The formula adopted by Messrs. T. E. Jenkins & Co., and at the Louisville Chemical Works, which is under my direction, is

Sal Soda, - - - -	21 lbs. 14 oz.	averdupois.
Tartaric acid, - - -	15 lbs.	"
Sugar (white) - - -	24 lbs.	"
Water, to make, - - -	25 gals.	

It is then put into strong twelve ounce bottles, and thirty-five grains of bicarbonate of soda added to each bottle, and immediately corked and fastened by twine or wire.

This preparation has been used in Louisville for about six years, and is gradually extending over various parts of the West and South. Where ever it has once got into use, it has never been abandoned, and the names of hundreds of physicians could be obtained, certifying to its utility and preference over the citrate of magnesia. I think that it would be well for our Pharmacopœia to adopt it.—*Journal Pharmacy.*

COMPOSITION AND PREPARATION OF URATE OF QUININE.

An attempt has been made, by experiments somewhat numerous, to establish the superiority of urate of quinine over the sulphate in the treatment of certain refractory intermittent fevers, and different other periodic affections. Although we consider the question as far from being settled, yet we shall furnish the method of preparation of this new salt.

Urate of quinia (*Bulletin General. de Therap.*) results from the combinations of ten parts, by weight, of crude quinine with twenty parts of pure crystallized uric acid. Five hundred grammes of distilled water are placed in a beaker on the fire; when the water boils, the crude commercial quinine is added; the ebullition is kept up for ten minutes, and then the pure crystallized uric acid is added in small quantities, taking care to stir the mixture with a spatula; this mixture is kept in a state of ebullition for one hour. Water is added from time to time, to preserve the volume of the mixture; it is afterwards filtered, and the preparation is decanted, and the *marc* is treated again with distilled water, in quantity equal to that first employed. This is caused to boil for twenty minutes,

passed through the same filter—the filtrates are united and evaporated to perfect dryness over a gentle heat. There is thus obtained a salt of a fine yellow color, sometimes amorphous, often crystallized in very brilliant spangles. Urate of quinine is soluble in boiling, or simply warm, distilled water; also soluble, although less readily, in cold distilled water.

Peraire, the discoverer of this new preparation, has taken pains to vary the formula containing urate of quinine, so as to furnish medicinal forms adapted to the most ordinary menstrua. The following are some of the principal formulæ:

For *Pills.*—Quiniæ Urat., q. s.
Pulv. glycyr., q. s.
Fiat masa.—These are to weigh from 5 to 16 centigrammes.

For *Potion.*
℞.—Aquæ gummat., - - - 100 grammes.
Quiniæ urat., - - - - 30 centigrammes.
Syrup. (Orgeat,) - - - 30 grammes.

For *Alcoholat.*
℞.—Alcohol, - - - - - 4 grammes.
Quniæ urat., - - - 60 centigrammes.
Tinctur. anisi, - - - - 4 gtt.
Dose: Ten drops through the day, on sugar.

For *Wine.*
℞.—Vin alb., - - - - - 125 grammes.
Quin urat., - - - - 1 gramme.

Am. Med. Monthly.

ALCOHOL AND BRANDY.

We shall look with interest for the promised report of the late discussion in the Pharmaceutical Association, on the subject of alcohol, its modes of preparation, degrees of purity and strength, and especially in its use in the sophistication of brandy and wines. There are few subjects connected with the drug trade of more general interest, whether from a moral, commercial, or economical point of view, and perhaps none about which intelligent people are more frequently in error.

It will surprise many druggists who have resorted to the celebrated Catawba Brandy of Cincinnati, as a purer, though perhaps somewhat less eligible article than that usually imported or sold with foreign marks upon it, to know that this famous domestic brand is only whisky modified by distillation from the marc of wines, and made paler or darker by a larger or smaller proportion of caramel.

To the many who have satisfied themselves with the idea

that they at least were safe from imposition, through a careful observation of the custom-house vouchers, and buying from none but original packages, it will be interesting to learn that these original packages, and the vouchers accompanying them, are used successively for many replenishings with factitious liquors, no purer nor better than they could make for themselves at one-fourth the cost. Many opinionated judges, who with much confidence pronounce upon the genuineness of the distilled juice of the grape, its "bouquet," purity, and good quality generally, will be loth to admit that a large proportion of that actually imported, and therefore confidently spoken of as genuine, is manufactured by processes quite as unlike the old-fashioned mode of distillation as those practiced by our own defrauding liquor dealers; and that a perfect imitation of French brandy can be prepared by any one having the requisite delicacy of taste and skill in mixing the ingredients used, and that these ingredients are common articles of commerce, are facts which are beginning to be generally admitted. Though the business of sophistication is regarded by thoughtful persons as one of the most fraudulent and disreputable that could engage attention, it is known to be carried on to an enormous extent and to have been the basis of large fortunes which have brought to their possessors corresponding social position and influence.

The questions which arise in view of these facts are full of interest to the pharmaceutist, who is the legitimate guardian of the great public interests involved. Whatever may be our views regarding the habitual use of alcoholic stimulants as beverages or as medicinal agents, we must all admit the importance of keeping these up to their proper standards of purity or of legalizing such standards as are compatible with their various uses and with the present known sources of supply.

Without passing an opinion at present on the points brought out in the recent discussions, we would call attention to the subject as one of the most interesting now under consideration among druggists and pharmaceutists. We invite communications from our correspondents, intending to give some space to the "ventilation" of it, and some further comments hereafter.—*Druggist's Circular.*

A Model Coroner's Jury Verdict.—"We find that Mr. F—— died a natural death, produced by dyspepsia, owing to Clams for dinner, and Cholera Morbus in the evening."

Should have been *Clams for dinner, and Cholera Morbus for supper!*

NEW PUBLICATIONS.

An Elementary Treatise on Human Anatomy, by JOSEPH LEIDY, M.D., *Professor of Anatomy, in the University of Pennsylvania, &c., &c., &c.*

We are indebted to the author and publishers for a copy of this most beautifully executed work which contains 392 illustrations, a very inappropriate name as frequently used, but not so in its present connection. Messrs. J. B. Lippincott & Co., have certainly performed their part with extraordinary success, and they deserve to be amply remunerated.

The position of Professor Leidy, entitles his opinions and works to careful consideration, and is a guarantee of the general anatomical accuracy of his statements. Had he limited the expression of these opinions somewhat, we would have had a more favorable view to take. As it is, we must demur, and take issue with him in the very introduction to his work. He says (p. 19): "Organized bodies derive their materials of composition from the mineral world, and they are subject to the control of the same laws which govern unorganized bodies. In the final dissolution of organized bodies, the material of composition again reverts to the mineral world." The most charitable construction which we can place upon this paragraph is, that the author did not intend to convey the meaning which his language conveys. If his proposition be correct, what need have we of Physiology? Chemistry and Natural Philosophy will teach us all that is necessary to be known of living man, and as for his condition after death, is it not summed up in this, that his "material of composition again reverts to the mineral world?" Nothing more. Fold your arms then, in the consciousness of the truth of this materialism, and neither hope for, or fear your "final dissolution," since it will only bring you into the mineral world—nothing more.

Again (p. 20): "It has already been indicated that the matter of mineral or unorganized bodies and that of organized bodies is the same. When however, we speak of the material of the latter, it is called organic matter, in contradistinction to that of the former, which is called inorganic matter. In other words, so

long as the material constitutes mineral or unorganized bodies, it is inorganic matter; but the same material having entered into the constitution of plants and animals, or organized bodies, is then named organic matter." The only difference then is in the name. There is not any in fact. We have then precisely the same matter, controlled by the same laws, existing in sticks, stones, and animals. There is not therefore, "one flesh of fish, and another of birds, and another of man," but all flesh is the same flesh because it "derives its materials of composition from the mineral world," and is governed by the same laws, whether it be living flesh or dead flesh, and in its final dissolution, it only reverts to the mineral world whence it came. It is strange however, that human flesh in its progress thitherward, should exert so pernicious an influence as to poison the living, which other flesh does not exert.

To assert that man and rocks are governed by the same laws, is simply absurd. To assert that in his final dissolution, "he again reverts to the mineral world, is more simply absurd, and worse than absurd, it is dangerous. We would study anatomy to little purpose, we would teach it to an unholy end, if we were to stop short at this heresy. The anatomy of parts leads the mind to investigate their uses. This investigation leads to an examination of the causes acting to produce known effects. A study of these causes brings you into communion with a peculiar force termed vital. Reflection upon this leads you backward to its source. Furthermore, you discover that this force is the active abstract agent, using matter for specific purposes, and hence being the power acting upon and not produced by matter, you are forced to acknowledge its independent existence. This confessed, you must concede that it may live after the final dissolution of the body, and so from anatomy and physiology there arises a faith in a future life. We do not expect them to teach us the nature of that life. It is enough that they are the handmaids of religion and teach us, if not more, at least the probabilities of a stated fact. We would however, again say, that we do not attribute to Prof. Leidy, a belief in his own doctrines as expressed.

In reference to the expressed design of the work, it would seem that the author had undertaken it with a view to simplifying the nomenclature of anatomy. We can not think that

he has succeeded; on the contrary, he renders confusion worse confounded, and this will be the case with any one who attempts to anglicize medical terms. We can not think that the author has rendered terms less obscure, or diminished their numbers. On the contrary, he has multiplied and mystified them.

Nevertheless, the work is a very valuable one, and while we can not recommend it as the best work on anatomy, we can safely say it is a very good one.

Editorial Department.

THE AMERICAN MEDICAL ASSOCIATION.

What will be the effect of our present political disruptions upon this body, and how will the South be represented in Chicago? Will this Association again represent the profession of the States which formed it, or will the good of the profession be advanced by a division of this body?

We do not propose to consider the question as to what ought to have been done, or might have been done, or may eventually be done. But there is one self-evident truth apparent to us, which is, that many years will elapse before representatives from the whole profession will again assemble under the same roof even for the discussion of scientific questions. And during this time it is to be feared that the Association will become dismembered beyond redemption.

But aside from the political movements of the day, which nevertheless will have their influence upon all our relations, do not the interests of the profession require, and will not its dignity and influence be enhanced, by such an arrangement as will insure a fuller attendance of physicians generally.

We think so, at least, for there must arise questions of more especial importance to one region of country than to another; and these will be more profitably discussed in the sections most interested.

Nor is this all: but there may be portions which for self-preservation, will find it necessary to guard themselves against

an influx of graduated imbeciles from other parts, where, for a few dollars, or less, they have obtained a right which the present Association recognizes as equal to any other, for all schools, from five dollars upwards, are upon the same level, according to its ideas of equality; and men who have not graduated at all, have a right to a seat, and voice, and vote, and influence, equal to that of the graduate. Now, it may occur, that in exceptional cases, the rigid rule of admitting none but graduates to fellowship would exclude some worthy men, and admit many utterly unworthy; still such a rule would be infinitely better than the present, for a graduate has at least a presumption in his favor, which a barber has not.

Perhaps, also, such a change would be useful in giving us officers who are representative men, not contracted or selfish, the choice of a clique or faction, or village, or town, or city,—not men necessarily living in the place at which the meeting is held, but representative, positive, known and tried men.

We sincerely wish that no division may arise necessitating these arrangements, but that they, with others, may be made in the Association as it now exists;—but this wish does not generate a hope in such a result.

The meeting at Chicago, we fear, will be but thinly attended. There will doubtless be an excitingly amusing time with the Solons of the Garden City, in reference to the next President. We suppose that even now there is log-rolling and wire-pulling, and feasting, in anticipation of who are to constitute the nominating committee, and who is to be its chairman: for that fact ascertained, who will be President? becomes a foregone conclusion. There are two schools there, and judging from the tone of their respective organs, we would suspect that each had a candidate in the field, for they are playing at cut and thrust, in any other than a christian spirit. We would recommend them to be calm, and beat their swords into ploughshares. There is excitement enough already over Illinois Presidents.

We publish in this number, the very excellent Sermon delivered by Rev. Mr. Lewis, before the students of the University, and are indebted to his kindness for a compliance with our request in regard to its publication. We regret to learn that his labors here will soon cease, and that his energies will

be directed in another parish Ministers as well as Physicians are sometimes subjected to the caprices of those to whose interests they devote themselves, and are like them very often called upon to practice forbearance. A cultivated scholar, an eloquent speaker, an indefatigable pastor, and an exemplary christian, will in due time, find a field worthy of his powers, and most heartily do we wish Mr. Lewis a speedy attachment to some charge where he will be worthily appreciated.

An Eastern critic has had the effrontery and duplicity to question the dignity of an article in our last number, and intimate that he objected to reflections upon religion, &c. Now, we would say to him, that our article was written against canting quackery, just such as he has himself been guilty of, in misrepresenting us with hypocritical words and mock solemnity.

We would see our right hand paralyzed—we would hold a jubilee over the last ebbing of our heart's blood, rather than write one word against religion or religious men. But we will write against Pharisees and hypocrites, and canting quacks, whether they be in pulpits, or professorial robes, or ordinary practice, or editorial chairs. They are a disgrace to the medical profession, and a reproach to the church, and their name is legion.

☞ Our readers will please take notice that our next issue will close the last volume of our journal, unless they come to the rescue by paying their dues. We have labored for two years, kicking against the pricks the while, and bleeding pretty freely for our temerity.

In this time we have learned some serious and expensive lessons, which will be useful to us hereafter. We have learned that promises should be drawn out in note form, with a penalty attached. We have learned that it would be easier, then, to recover the penalty, than to force the performance of the promise. If all who have been readers of our journal would pay one-half of the subscription price, we would not be compelled to lose one cent.

Now, however, we must say plainly to delinquents, that

their accounts will be placed in the hands of others for collection, unless they are paid to us immediately.

This will be an exceedingly unpleasant course to take, bnt duty demands that we shall take it. Let no one be offended, and imagine that he has been singled out as an example, for all will be treated alike, and the costs of collection must fall on the parties themselves.

Louisville School of Practical Medicine and Surgery.—This Institution will open on the 4th of March, under the direction of Dr. T. P. Satterwhite and the Editor, aided by prominent gentlemen, who have kindly offered their assistance.

All the branches necessary to a thorough Medical education will be taught, and if desired, private instruction will be gfven in Greek, Latin, and Mathematics.

The first session will terminate on the last of September.

The second session, under the direction of Dr. Satterwhite, will commence on the 10th of October, and terminate the last of February.

The school is founded in connection with the Eastern Dispensary, and hence ample opportunities will be afforded for the acquisition of practical knowledge, and a conversance with the diseases which prevail in the South and South-West.

For further information, apply to Dr. Satterwhite or the Editor.

The Report of the Eastern Dispensary proves that Institution to be in a very flourishing condition, when we remember that it is in the first year of its existence. The number of deaths is very small; but it must be remembered that the class of patients who are prescribed for at dispensaries, are able to walk to them. Many, however, are attended at their own houses, who are unable to go to the Dispensary.

This excellent charity is sustained by the individual efforts of Dr. Satterwhite, aided by the Medical Faculty of the University. "Verily they will have their reward."

The present Class of the University of Louisville, exceeds that of last year nearly fifty per cent.

FIRST ANNUAL REPORT OF THE EASTERN DISPENSARY, HANCOCK STREET.

The First Class embraces Males over 12 *years of age; the Second, Females over* 12 *years; the Third, Males under* 12 *years; the Fourth, Females under* 12 *years.*

	First	Second	Third	Fourth	Total.
Syphilis,	8	11	.....	1	20
Gonorrhea,	11	3	.....	.....	14
Orchitis,	1	.....	.....	.....	1
Phymosis,	.....	.....	1	.....	1
Fracture of Femur,	2	.....	.....	.....	2
Fracture of Forearm,	.....	1	.....	.....	1
Fracture of Ribs,	1	2	.....	.....	3
Fracture of Clavicle,	2	.....	.....	.....	2
Dislocation of Humerus,	1	.....	.....	.....	1
Varicose Ulcer,	2	.....	.....	.....	2
Varicose Veins,	2	1	.....	.....	3
Amputating Uvula,	1	.....	.....	.....	1
Oedema of Uvula,	.....	1	.....	.....	1
Strabismus operated upon,	.....	1	.....	.....	1
Spinal Curvature,	.....	.....	.....	1	1
Mammary Abscess,	.....	1	.....	.....	1
Aneurism,	.....	1	.....	.....	1
Nasal Polypus,	.....	1	.....	.....	1
Wounds and Injuries, Burns,	.....	.....	.....	.....	27
Enlarged Cervical Glands,	.....	2	.....	.....	2
Parotitis,	.....	1	.....	.....	1
Irritability of Bladder,	.....	1	.....	.....	1
Coxalgia,	1	.....	.....	.....	1
Boils.	1	2	.....	.....	3
Erysipelas,	2	2	.....	.....	4
Diseases of Ear,	2	4	.....	.....	6
Odontalgia,	8	11	.....	3	22
Hernia,	1	2	.....	2	5
Opthalmia,	11	14	6	2	33
Frost Bite,	2	.....	1	.....	3
Abscess,	1	3	2	.....	6
Whitlow,	7	4	1	.....	12
Chilblain,	2	.....	.....	.....	2
Dog Bites,	2	.....	.....	.....	2
Paralysis,	2	1	.....	.....	3
Anthrax,	.....	1	.....	.....	1
Lachrymal Fistula	1	.....	.....	.....	1
Sciatica,	1	1	.....	.....	2
Lumbago,	6	.....	.....	.....	6
Scrofulous Disease, Elbow Joint,	1	.....	.....	.....	1
Psoas Abscess,	1	.....	.....	.....	1
Ulcers of Legs,	10	3	.....	.....	13
Measles,	.....	.....	2	4	6
Worms,	.....	.....	4	10	14

DISPENSARY REPORT— *Continued.*

	First	Second	Third	Fourth	Total.
Emphysema,	.....	1	.....	.....	1
Cerebral Meningitis,	1	.....	.....	.....	1
Tenia Capitis,	.....	.....	1	.....	1
Whooping Cough,	.....	.....	2	.....	2
Uterine Affections,	.....	19	.....	.....	19
Accouchments,	.....	2	.....	.....	2
Abortion,	.....	1	.....	.....	1
Hysteria,	.....	2	.....	.....	2
Pruritis Vulva,	.....	1	.....	.....	1
Catarrh,	.....	1	.....	.....	1
Neuralgia,	1	.....	.....	.....	1
Hepatitis,	2	2	.....	.....	4
Hemicrania,	2	1	.....	.....	3
Dyspepsia,	5	6	.....	.....	11
Cholera Morbus,	4	1	.....	.....	5
Hemorrhoids,	3	.....	.....	.....	3
Cardiac Disease,	1	.....	.....	.....	1
Mania a Potu,	4	.....	.....	.....	4
Aptha,	1	1	4	.....	6
Scarlet Fever,	1	.....	6	1	8
Rheumatism,	14	8	.....	.....	22
Eruptive Diseases,	2	.....	1	6	9
Indigestion,	21	19	6	.....	46
Pharyngitis,	2	.....	.....	.....	2
Obstinate Constipation,	3	1	.....	.....	4
Typhoid Fever,	2	1	.....	.....	3
General Debility,	1	.....	.....	.....	1
Gastritis,	1	.....	.....	.....	1
Ulceration of Larynx,	1	.....	.....	.....	1
Enlarged Spleen,	4	.....	.....	.....	4
Cholera Infantum,	.....	.....	6	12	18
Diarrhœa from Teething,	.....	.....	4	1	5
Diarrhœa,	13	5	10	8	36
Tonsilitis,	3	2	3	.....	8
Intermittent Fever,	97	83	26	33	239
Remittent Fever,	7	1	2	.....	10
Obscure Malarial Affections,	9	2	1	2	14
Phthisis Pulmonalis,	5	18	1	2	26
Pleurisy,	1	2	.....	.....	3
Pneumonia,	4	4	1	2	11
Bronchitis,	12	3	1	5	21
Laryngitis,	3	2	.....	.....	5
Dysentery,	10	6	4	.....	20
Unknown,	11	3	7	10	31
Vaccination	4	.....	18	32	54
Deaths 8. TOTAL,	348	273	121	137	906

T. P. SATTERWHITE, M.D., *Physician.*

MONTHLY MEDICAL NEWS.

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A DISSERTATION ON BATHING.

By Mr. JAMES V. SCRUGGS, of Missouri.

In reference to the propriety of regular and frequent ablution as a means of cleanliness, it is needless to enter fully: but a brief consideration of the physiological effects of water, whether applied to the surface of the body, or taken into the stomach, may be useful.

It will be necessary to premise my observations on the effects of water applied to the surface, by some short account of the skin itself.

The skin is to be regarded, not only as a covering to the body, a protection to the softer and more delicate structures placed beneath it, but as being also intended to subserve many other offices no less important. The skin is constantly performing the necessary function of expelling a considerable portion of the residue of nutrition and digestion. Eminently a bad conductor of heat, it maintains the elevated temperature of the body by confining its heat, and prevents external heat and cold from necessarily and at once destroying life. Protected by this power of resisting the passage of heat, life continues under the severest cold, and is able to endure, with comparatively little inconvenience, almost incredible elevations of temperature. Supplied with an enormous number of nervous filaments to endow it with sensation, it not only acts as the sentinel against danger—as the mind's ready and most accurate informant on all points connected with external things; but it is a ready means by which the mind may be made to endure extreme suffering, and the sensorial functions

be materially and directly injured. It is a ready means by which the nervous system may be soothed and quieted, and tranquil feelings brought back, and even cheerfulness and mental acuteness substituted for melancholy and mental torpor. Furnished with a vast quantity of blood to supply its own substance, constant renewal to supply its secreting organs and to keep up the energy and healthiness of the nerves which are dependent on the supply of blood, the skin is to be looked upon as an important organ, by influencing which, a very large quantity of blood may be suddenly thrown into the system, and there, in an incredibly short time, produce perhaps irreparable injury upon a part, by attracting the blood to which, the internal organs may be relieved at once from a load of blood, and enabled to resume the performance of those natural and necessary functions which it is their business to discharge, and which that gorging of the vessels had interrupted.

The skin proper is covered by a much thinner layer, called the cuticle—a layer which may with little impropriety be called inorganic, a structure which is destitute of nerves or blood-vessels, without feeling or sensation of any kind, and in fact without life. This structure, then, is intermediate between the body and external objects. It protects it from being irritated by contact with those objects, without preventing it from feeling them. This is not renewed in the way that other parts of the body are—by absorption of the old and deposition of new particles;—but by a constant deposition of small scales or powder, the particles of which adhering to the subjacent surface and to each other, constitute the cuticle. By friction these are partly rubbed off, likewise by ablution. If neither rubbed nor washed, the deposition going on, these scales or particles accumulate and form a thick crust on the outer side of the cuticle. Under the cuticle, between it and the skin, is situated a net-work of vessels of excessive minuteness.

After this brief notice of the structure and function of the skin, it will be necessary to notice the effect which temperature produces upon it. Warmth at first increases the action of the vessels of the skin, and stimulates the sudoriferous glands to pour out their secretion more abundantly; and the

skin is sensibly reddened,—if the heat is increased still further, inflammation, blistering, contraction, wrinkling, and disorganization ensue. Cold at first stimulates the skin, reddens it, and if continued the vessels contract, the retemucosum no longer circulates its fluid, perspiration is no longer evolved, the skin becomes pale, and if still continued, loss of feeling and death of the part, if not of the individual, ensues. This supposes the individual does not change his medium, and that the skin is still surrounded with air. The effect of water is somewhat different if the body is in a state of vigor, and in full possession of its heat. The skin being unchilled, the effect of immersion in warm water is much the same as that from moderate heat applied in other ways, except that the breathing is somewhat more laborious, and the skin more actively pours out its secretion. The effect of immersion in cold water, under the same circumstances, is at first a rapid chilling, varying in degree according to the powers of the system—the fullness or emptiness of the stomach, the previous heat of the body, and the temperature of the water. This, if all things are favorable, is soon followed by a brisk reaction, and the body soon regains its temperature. Now, if the individual leaves the bath before the heat has again begun to diminish, and has the surface instantly protected with clothing, the consequent effects are a much increased action of the vessels of the skin, and a relative increase of the amount of its secretion and temperature. This does not, however, include the whole difference between the effects of hot and those of cold water. The cold water not only clears the surface of its scurf, and of its unctuosity as thoroughly as the hot water does, but it has this further effect: the vascular excitement into which the hot water throws the skin, and especially the retemucosum, is readily and easily checked by cold air, or depressing influence, acting either on the heart's action or on the skin itself; whereas, the vascular excitement into which cold water throws these textures is rather increased by cold air, and is less liable to be materially or suddenly lessened by any depressing influence. I have said that the first effect of cold water on the surface, is that of rapidly chilling it. Cold water acts on the vascular system as a direct sedative, checking its circulation and stopping its secretions, and throwing

large quantities of blood on the internal organs. If the water is not extraordinarily cold, and the powers of the heart and arteries are in full vigor, they are crowded by the sudden rush of blood into extraordinary exertion, and drive the blood back again to the skin, and cause the circulation to be resumed with unwonted briskness. The warmth of the surface is restored, and reaction has taken place. This state of things will continue a longer or shorter time, according to circumstances, and then the heart and arteries become no longer able to counteract the cooling from the cold water. They are overpowered, and no longer able to dispose of the quantity of blood which the rapidly refrigerating power of the water is constantly throwing back upon them: they become loaded with blood; their action becomess oppressed and less energetic; the skin is now once more chilled; its circulation is once again languid; shivering, loss of feeling, and stupor; and the cause still continuing, death ensues.

It has been said above, in order to the heart and arteries being able to repel the blood again to the skin, which the immersion in cold water had thrown upon them, several conditions were necessary: First, the water should not be extraordinarily cold. This must vary according to circumstances; but generally the temperature of the water should be about twenty-five or thirty degrees less than the body. But it must not be forgotten that, provided speedy reaction does not come on, and provided there is no organ or function in such a state as to be injured by the influx of blood, the colder the water, within certain bounds, the greater the reaction and the benefit. Second, as to the time a person should remain immersed. The colder the water the shorter the time. Should the immersion continue, it is seldom prudent to remain longer in a cold bath than from three to five minutes. The invalid should hardly continue in it so long as that. Third, the effects will vary according to the degree of energy with which the heart and arteries are acting at the time. There can not be a more dangerous practice than cold bathing while the body is fatigued from excessive muscular action or from heat, whether it be the consequance of high mental excitement, or of long-continued mental exertion, or loss of sleep, or however else brought about. The heart and arteries acting languidly, the cutaneous

circulation being therefore feeble, it requires very little cold or other depressing cause to load unduly the heart and arteries, having already more to do than they can perform without inconvenience; and in this case there is either no reaction, or the reaction is only partial. Long continued shiverings and great prostration of strength succeed, followed, perhaps, by local determination of blood, or a generally disordered state of the system, inflammatory affections, &c. Fourth, the effect of immersion in cold water will vary according to the heat of the skin, and to the vigor with which the cutaneous circulation is going on at the time. The hotter the skin and the greater the vigor of its circulation, the more safe is cold bathing. But it must be especially remembered, that this supposes the heat to be caused not merely by the sun's rays, or any similar external heating cause, but to be partially produced by the energetic action of the heart and arteries. In fact, the hotter the surface of the body under such circumstances, the quicker the reaction. It is therefore not well to stand, after undressing, any length of time before plunging into the water. Such a practice chills the body very much more, and in many cases renders bathing, which would otherwise be profitable and advantageous, absolutely unsafe. Fifth, the effects of immersion in cold water will vary according to the fullness or emptiness of the stomach, according to the period of digestion, and according to the facility of digestion. It has been remarked elsewhere, that the stomach during digestion, and particularly during the first stages of it, is supplied with a very large quantity of blood. Bearing this in mind, let us think of what must necessarily be the effect of either warm or cold water while the stomach is in that state, and more especially if the quantity of blood sent to the stomach is barely sufficient for the purpose of digestion, or more particularly if the action of the stomach is weak and disordered. The quantity of blood either directly or remotely directed to the skin by either warm or cold bathing, would lead us naturally to preconceive that a more or less severe fit of indigestion would follow. But this is not the only risk which attends the practice of cold bathing under such circumstances. So large a quantity of blood being directed to the stomach, the whole energies of the heart and arteries are not at immediate command—the skin is chilled,

and the blood thrown on the great vessels: these are unprepared to devote all their powers to the restoration of the circulation in the skin. Diverted by the demands of the stomach and those of the skin, both duties are but partially performed unless the powers of the system are very great and quite unimpaired. And not only are the functions of the stomach interrupted, but reaction is not immediate, and much risk is run of causing a disordered condition of the whole vascular system, and local and perhaps serious disease. Sixth, the effects of immersion in cold water will vary according to the state of the mind. The influence of the mind on all the functions of the body, and particularly on the heart, are well known to be great. The palpitation which attends excitement of the mind, the blush which accompanies a sense of shame, the pallor of the skin and shiverings which attend fear, the local determination of blood, as apoplexy, &c., which so often follow violent passions or severe mental exercise, are all demonstrations of this fact. If the mind is languid, debilitated, worn, lethargic and desponding, the bodily functions are almost always disordered in their action, and the use of the cold bath will most commonly be attended with risk. It will not be attended by instantaneous and necessary reaction. The hot bath in cases of this kind, by determining a large quantity of blood to the skin, and so relieving the brain and the greater masses of the nervous system from a large amount of blood, is to be preferred in many such cases, and as a means of temporary relief, is, in many of them, infinitely better than the major part of the remedies to which many commonly fly.

Many persons are much benefitted by an occasional use of the warm bath just before getting into bed at night, and the practice is not under these circumstances followed by any inconvenience: but if they use the warm bath at any other time it is followed by a sense of chilliness, and is not unattended with danger. This is attributable to two distinct causes: First, the oleaginous secretion that is on the skin is removed by the bath; second, the cutaneous vessels are much excited by the heat of the water; and that excitement is often followed, especially if the system be weak, by corresponding exhaustion and depression; and during that state of the circulation of the blood in the skin, is easily checked by contact

with the cold air. The blood is thus thrown upon the internal organs, and congestion or inflammatory disorders of those organs often ensue. It is well, then, under such circumstances, to use the hot bath at bed-time in preference to using it at any other time; for the bed and bed-clothes protect the surface from the cold air until the oleaginous secretion has again been poured out, and until the excitement that the heart has produced has subsided, and the corresponding and resulting depression has likewise disappeared, and a natural and proper degree of vigor and activity of the cutaneous circulation have returned.

There are few customs so conducive to health as sponging the surface of the body all over with cold water every day. From this the chill is trifling, the reaction instantaneous, and the benefit, I am satisfied, not to be credited until after a trial.

We have said that the skin is constantly secreting a fluid called perspiration; but besides this. it is always covering itself over when the system is in a state of moderate health, with an unctuous or oily secretion, probably as a means of preserving its elasticity and softness, and of rendering it a still worse conductor of heat. Now, this unctuous secretion is not like the perspiration, soluble in the air, but it remains on the skin, and mixing with the enfoliated scales or particles of the cuticle, forms a crust over the skin — a crust partially, but only very partially, removed by the movements of the limbs and body, or by changing the clothes. This crust not only irritates — more or less giving rise to many indescribable and perhaps highly injurious and certainly very annoying feelings of uneasiness and discomfort — but it actually interferes with the proper and adequate exercise of the functions of the skin. Sponging the surface removes the unctuous and scaly particles, protects the skin from sources of irritation and incumbrance, and enables its functions to be discharged without impediment.

If this were the whole advantage which attends the practice, it is probable that enough would have been said to make us adopt it; but this is not all the good which the regular use of cold water as an external application involves. No matter how used, whether by sponging or the shower bath, or immersion, cold water excites the action of the vessels of the skin,

gives them tone, enables them to resist the influence of the ordinary vicissitudes of the weather, and thus ward off disease to a very remarkable extent.

Another practical fact must be mentioned: The skin is covered over with an oily secretion which subserves many important ends; not the least of which is to increase the non-conducting power of the skin in defending the body from the effects of an elevated temperature, and in checking the evolution of its heat when it is placed in a temperature lower than its own. One necessary effect of sponging the surface is to remove this oily secretion, and the skin is therefore not so protected until the oily matter is again evoked in sufficient quantity to cover its surface. This, if the individual is in perfect health and in full vigor, takes place in a very brief space of time; but if the individual is out of health, his secretions irregular, and his system debilitated, it will probably be several hours before it is accomplished. Under such circumstances the sponging should be used only at night just before going to bed, for the body is then protected by the bed and bedclothes from the influences of the cold air, and in the morning the skin is once more covered with the oily secretion, and once again prepared to come in contact with the cold air without risk.

It will be necessary, before closing my remarks, to say a few words in reference to friction over the surface.

Friction alone is generally an advisable and energetic means of giving vigor, activity and tone to the vessels of the skin. The flesh-brush furnishes us with the best means of using the remedy, and a valuable remedy it is in many cases of lingering disease or protracted convalescence, or where, as in diseases of the spine, muscular exercise is not to be obtained.

As an adjunct to bathing, the shower-bath, or sponging with cold water, friction is invaluable. Every bather ought invariably to resort to it as a means of accelerating the reaction, and increasing it in degree. The towel with which the individual dries his skin, can hardly be too rough or used too freely.

SHEPHERDSVILLE, KY., December 18, 1860.

J. W. BENSON, M.D.,

Dear Sir, — As you have solicited correspondence, I submit the following, which, if you deem worthy of publication in your valuable journal, is at your disposal. Hoping that you will pardon and correct any inaccuracies which may occur in this, my first communication to you,

I remain, yours with respect,

H. F. KALFUS.

GANGRENE OF THE LUNGS, FROM CHRONIC PNEUMONIA, OF SEVEN MONTHS' STANDING.

Having met with a case of the character above mentioned, and on account of its very rare occurrence (it being the only one with which I have met in seven years' practice), supposing it might possibly interest some of your numerous readers, I communicate to you a meager report.

The patient, a male, aged twenty, single, had suffered from an attack of pneumonia some seven months previous to my seeing him, and after a partial recovery, continued to complain of considerable and constant pain in the left breast, which he referred to the region of the lower lobe of the lung. When first seen by me, he was considerably emaciated, complexion cadaveric, but no hectic; breath very fetid; hacking cough, and some expectoration; respiration somewhat embarrassed by the imperfect function of the left lung. He had not occupied a recumbent position for seven or eight weeks, owing to the fact that whenever it was assumed it produced violent fits of coughing, accompanied by oppressive, suffocating sensations, and very profuse expectoration of an offensive muco-purulent matter. The suffocation I supposed attributable to the flow of matter into the bronchial tubes, by its own gravity, from the cavity of the abscess with which they were connected. On examination I found unmistakable evidence that the matter had perforated the intercostal muscles about the sixth rib, just below the inferior edge of the pectoralis major, where I made an incision, from which the matter followed the point of the bistoury in a stream the size of an ordinary goose quill. At first it seemed muco-purulent, streaked with blood, which, I think, was from the wounded integuments, afterwards icho-

rous, whey-like, and extremely fetid, very suggestive to one's olfactories of the odor of rotten eggs, and interspersed occasionally with shreds and partially decomposed particles of the parenchymatous tissue of the lungs, rendering it somewhat floculent. There was an entire absence, however, of that dark, dark-greenish, and grumous appearance observed by Gerard in his cases of circumscribed gangrene of the lungs. The discharge amounted to nearly a pint in quantity, discharging, I suppose, half that quantity between my first and second visit. After evacuation, the "cracked pot" sound was very distinct on percussion, also broncophony on auscultation, indicating a cavity of considerable dimensions. I think the pleurae costalis and pulmonalis are firmly adhered, allowing a free and uninterrupted exit of the matter from the external orifice, which may possibly prevent the determination of empyema or pneumo-thorax.

TREATMENT.—I put him upon cod-llver oil, ʒiii per day, in whisky, in connection with the following cheap yet very valuable indigenous bitters:

Cornus Florida.
Liriodendron Tulipifera,
Prunus Virginiana, a a ʒii.
Spirits, one pint.

Digest for twenty-four hours. Dose, a wine-glass full three times a day, and free and generous diet.

On my second visit I found the patient had borne the evacuation well, with no signs of prostration worthy of mention. Appetite good, even to rapacity; less cadaveric; pulse 90, soft and full, and said he felt quite well; walked his room, and had rested well in a recumbent posture.

I am aware that gangrene, resulting from chronic pneumonia, is of very rare occurrence, having been noticed, as far as I am acquainted, only by Andral and Carswell, though I believe this to be a case. Carswell supposes that where chronic inflammation precedes the gangrene, that the death of the gangrenous part is brought about by obstructed circulation, the vessels being compressed or obliterated by the indurated texture. But may we not more reasonably suppose the obliteration of those vessels to be the *consequence* of the gangrene, and therefore entirely subsequent thereto?

I will say, in conclusion, that this is a case in confirmation

of the observations of Hasse and Guislane, as to the predisposition in those of unsound mind and feeble cerebral development—the patient being, in this instance, slightly *non compos*, very imbecile in mind, but not entirely idiotic, as he performs the duties of a good farm hand with some skill. He is also the progeny of a marriage of cousins.

SIMPSON ON COCCYODYNIA, AND THE DISEASES AND DEFORMITIES OF THE COCCYX.

[From the Philadelphia Medical News.]

GENTLEMEN: In the first bed at the right-hand corner as you enter the ward for female diseases, there lies a patient whose history is interesting and instructive in more than one respect. But I call your attention to her case now, inasmuch as she presents you with a well-marked instance of a disease of which you will find, I believe, no description in any book, and on account of which I have deemed it necessary to subject her to an operation, such as has not before, so far as I am aware, been performed, at least under similar circumstances. I shall, first of all, briefly relate to you the history of this case; then take occasion from it to make some observations on the nature and symptoms of the disease from which the patient suffers; and, lastly, try to point out to you how it may be most successfully treated.

E. F., a married female, of 40 years of age, has never had any children, but menstruated regularly and painlessly, and enjoyed good general health until about two years ago. At that time her menstrual discharges began to be more profuse and frequent than usual, and to be attended at times with pain. This she for a long time disregarded, believing the phenomena to be due to the "change of life;" but as she was becoming gradually weakened by the excessive losses of blood, she applied at my house for advice, about six or eight months ago, just after recovering from a severe attack of menorrhagia of three weeks' duration. In addition to the bloody discharges, and at the intervals between them, she suffered from a constant, fetid leucorrhœa; and she also complained of occasional shooting pains in the back and lower parts of the abdomen. She was much emaciated, and had a very cachectic appearance; and my nephew, Dr. Alexander Simpson, who then saw her, found the cervix uteri to be very much enlarged, indurated, and ulcerated; and it felt rough and irregular, like a commencing cauliflower excrescence, and bled freely when rudely touched. The ulceration and induration were not distinctly

limited to the cervix, however, so that no hope could be entertained of curing the disease by amputation of the cervix uteri. But the dried sulphate of zinc was applied on several occasions, with the happy result of causing nearly the whole of the indurated and infiltrated mass to slough away, and there is now left a firm and healthy cicatrix. The patient does not now suffer from any unusual loss of blood, although she menstruates freely and regularly; and, so far as regards the uterus, she may be considered perfectly well, if we except a small hard knot in the anterior lip of the cervix, which may still, perhaps, be regarded as suspicious. But as she recovered from her uterine disease, and as the symptoms attendant on it began to disappear, she commenced to complain, after sitting on the damp grass in her avocation as a washerwoman, of a dull, aching pain seated in the very lower extremity of the spinal column, for which my nephew contented himself with prescribing in the first instance a belladonna plaster, and afterwards various local anodynes and general tonics for a space of two or three weeks. As this pain, however, instead of abating, seemed always to become more constant and harrassing, and as the patient could not sit down except on one hip at a time, and even then with the greatest suffering, an examination was made of the painful part, when it was found that the coccyx was unusually straight and long, so that it reached far backwards and downwards, while the very tip of it was felt through the rectum to be projected suddenly forwards. *Pressure of the coccyx and movement of it in any direction caused pain.* To subdue this sensibility thirty drops of a watery solution of the bimeconate of morphia were twice injected into the soft parts around the bone, on two different occasions, and with an interval of several days between each injection. This measure had the effect each time of deadening the pain, but it led to no permanent result. The next step employed for her relief was the separation of the coccyx from all the surrounding muscles, tendons, and ligaments, which was done subcutaneously, with a tenotomy knife. Three or four weeks afterwards the patient returned, saying that for a time she had felt better, but that during the last week she had suffered as much pain as ever, and was incapacitated for work from it. She was, in consequence, sent into the Hospital; and on Saturday, June 3, I removed the two lower segments of the coccyx by cutting down upon them through the skin, and dividing the bone with a pair of bone pliers; and then the separated portion being pushed through the wound by the finger of an assistant passed into the rectum, it was easily detached from the soft parts, and so removed. The edges of the wound were brought to-

gether with two iron wire stitches, which were removed some days afterwards, and the wound is now almost closed up.

Amputation of the coccygeal bone has been had recourse to in this patient, as it seemed to afford her the best chance of relief from a peculiar form of disease, which is anything but rare, although no written account of it has, as far as I know, as yet appeared. If you will take the trouble to make inquiry of observing men in extensive practice, or if you have the opportunity of making the observation for yourselves, you will find that cases are ever and anon occurring, where the patient complains of pain in the region of the coccyx, very constant, and aggravated by certain movements of the trunk, and usually attributed by the patient to some kind of direct injury, or to exposure to cold. The most common cause of the disease, so far as I have been able to discover it from inquiries addressed to the patients themselves, is injury of the coccyx, inflicted either by falling backwards upon it, or, more frequently still, brought on by sitting down suddenly and forcibly on the corner of a chair or other angled body. Often enough, however, it is impossible to trace it to any traumatic origin: and the patient can only tell you, as in the case of our patient in the Hospital, that she had been sitting on damp grass, or had been otherwise exposed to cold before she began to experience the pain; or she may be altogether unable to adduce any assignable cause. I say she, because all the patients whom I have yet seen affected with this disease have been of the female sex; although I presume it is not entirely confined to them, and it is even not very clear why they should be more subject to it than the members of the other sex. I have said that when you have been made aware of the possibility of the occurrence of this complaint, and when you begin to look out for it, it is by no means very rare. Diseases, like other objects in nature, sometimes seem rare, not because they are so in reality, but merely because our attention has not happened to be fully called to the recognition of them as they pass before our eyes. I think that you will hold me justified in making this remark, when I tell you that within the last three weeks I can count up at least ten cases of this particular malady which I have seen in private or consultation practice. Of course, it is a very unusual circumstance to meet with so many during such a short period; but is it not more wonderful than what often enough occurs in the experience of all surgeons in extensive practice, who find that during a short space of time they may have a succession of cases all presenting the same form of injury, as an epidemic, as it were, of fractures or dislocations, and that a long period may elapse before they again meet with a similar case. Such a rapid succession of cases of the kind I allude to is, I repeat, of course an exceptional occurrence.

But I know of old, and, on looking back upon many past years of practice, that I have seen and recognized a great many cases of this disease; and I have probably seen many others also, the true nature of which I did not at the time understand. It is therefore, I believe, by no means an uncommon disease; and if you can discover and succeed in curing it, you will often get much credit to yourselves. That you may be enabled to do so, let me tell you how you are to detect it, or point out to you

The Symptoms of the Disease.

The leading symptom of the disease is pain in the region of the coccyx experienced by the patient whenever she sits down and rises, and sometimes while she remains in a sitting posture. Most of the patients affected with it are obliged to sit on one hip, or with only one side resting on the edge of a chair, or with the weight partially supported by a hand on the chair; and they are rendered sometimes very awkward and miserable in consequence. Some of them actually dread sitting down — so great is the pain then felt; and not only so, as I have hinted already, the pain is in many cases aggravated or renewed whenever it becomes necessary again to resume the erect posture. There are other movements of the coccyx besides, which are liable to be attended in such cases with pain. Thus, some patients have pain with every step they take in walking, while in others the movements of progression excite no uneasiness whatever. Others, again, feel the pain most when the bowels are being evacuated, or under any circumstances in which the sphincter or levater ani, or the ischio-coccygeal muscles are called into action. The pain is not in every case very acute or intolerable; and you will sometimes meet with patients who have borne with it for many years, sometimes without having sought any relief at all, sometimes in despair from the inefficacy of the remedies that have been employed. I have under my care just now a patient suffering from menorrhagia, who tells me she has been annoyed more or less for about twenty years with a pain of this description in the coccyx, not very severe, but which she has never found any means of alleviating, though formerly she consulted various physicians and surgeons on the subject. Again, the pain is not at all times equally severe in the same patient. When in Cumberland lately I saw a lady who had kept her bed the whole winter, because of the excruciating pain which she experienced in attempting to sit upright or walk about; but who, at the time when I saw her, had got so far relieved as to be able to move about a little. The distinguishing feature of the disease in every case is that the pain is felt at the lowest part of the spine, or rather in the site of the coccyx, to which it is always

specially referred by the patient, and where pressure always aggravates it. Pressure and movement of the coccyx, too, with the finger in various directions, produce pain, and the kind of movement which is thus attended with suffering differs in different cases.

Nomenclature of the Disease.

If it be desirable, as I think it is, to give the disease which I have described a distinct designation, I think that by availing ourselves of the Greek (*hodunee*, pain), which enters into the composition of several names already sufficiently familiar to our ear, we can construct a name for this disease that will serve for its admission into a nosological list. We are constantly in the habit of speaking of pain in the side as pleurodynia, and the designations gastrodynia and mastodynia are in common use for pains in the stomach and pains in the mammæ; and following this analogy, it seems to me that we might very conveniently refer to this painful affection of the coccyx under the analagous name of *coccyodynia*. Besides that it is sufficiently terse to be easy of use, the designation presents this great advantage, that it involves no pathological theory as to the nature of the affection, but simply expresses its most striking symptom. But what theory can we form as to its proximate cause? or what, in other words, is

The Pathological Nature of the Disease?

I believe that the pain which is the characteristic of coccyodynia is excited during the action of particular muscles, or particular sets of muscles, and that when the coccyx, or rather the coccygeal joints, have been in any way injured, or when it or its surronnding fibrous tissues have become the seat of inflammation, or other morbid change leading to super-sensitiveness of the part, any action of the muscles in connection with it which causes motion of the coccygeal bones will, at the same time, give rise to a feeling of pain. Now, in order to understand aright the circumstances under which pain is likely to be produced by the action of muscles on an inflamed or otherwise diseased coccyx, I must beg of you to recall to mind your knowledge of its normal anatomy; and to revive your recollections on this subject, I show you here a sketch of the coccyx in its muscular and tendinous relations, which has been obligingly drawn for me by our able demonstrator, Dr. Cleland, from a dissection made for the purpose by my former class-assistant, Dr. Peter Young.* This will serve to remind you that the coccyx gives attachment along either side to portions of the greater and lesser sacro-sciatic ligaments; and that as regards muscles it has inserted into it, 1, the internal ex-

* The engravings have not been procured for this No. of the Medical News.

tremity of the fibres of the ischio-coccygei, which arise at their outer extremity from the inner surface of the tuberosities of the ischia, and pass directly inwards to be attached to the outer border of the coccygeal bones along its anterior aspect; so that when both muscles are in action at the same time their tendency is to draw the coccyx somewhat forward, and when only one is in action the coccyx will be drawn to the corresponding side. Then, 2, from the extremity of the bone spring the tendon of the sphincter ani, and some of the fibres of the levator ani, which have a powerful effect in pulling the end of the coccyx inwards whenever any straining action of the muscles that close in the pelvis becomes necessary, as in defecation, coughing, etc. But, 3, the most powerful muscles connected with the coccyx are the large gluteal muscles of either side, some of the tendinous and muscular fibres of which rise directly from the posterior surface of the bone, while others may come to act upon it indirectly by means of their origin from the great sacro-sciatic ligament. In sitting down and in rising up the glutei of both sides are simultaneously in action, and during progression when the body is swayed from side to side they act in succession. Now I have already told you that in some patients pain is experienced most severely during these movements, and I think that in them the pain is fairly referable to the traction upon the coccyx exercised by the great glutei muscles. Other patients, again, complain of pain chiefly when the bowels are being moved, and in them the sensation is probably due to the action of the coccyx of the sphincter and levator ani; while in a third class of cases pain may very possibly be excited, during the contraction of the coccygeal muscles, as in the act of sitting down. It is by no means very easy to understand why the action of particular muscles should thus be attended with the production of pain in particular instances. It may be that the disease is confined to the tendons of the muscles or to the portion of the coccyx from which they spring: or, possibly, certain muscles during their action may bring the bone into contact with a super-sensitive nerve or inflamed structure, and in this way give rise to the painful sensation. Again, the fact of the disease being more common in women than in men, or being confined indeed almost exclusively to the former, may be due to the greater development of the gluteal muscles, which results from the larger size of the female pelvis. It is not necessarily due to lesions sustained during parturition, although sometimes so produced, for it occurs as frequently in the young and unmarried as in those who have passed through one or more confinements; and more probably it is dependent in some way on the peculiar form and large size of the female pelvis, and on the greater development of the gluteal and perineal muscles which

result therefrom. But, however that may be, we have most convincing proof that the pain is elicited by the action of the muscles in the fact that separation of the fibres of these muscles from the coccyx often affords the most effectual and instantaneous relief. And this leads me to speak next of

The Treatment of the Disease.

Formerly, before I knew much of the nature of the complaint, I used to have recourse to many different remedies, and many different modes of treatment, in order to procure for my patients relief from their pain. Opium, in its various forms, belladonna, hyoscyamus, and a variety of other sedatives, were all administered internally, or applied locally; but only in general with the most temporary benefit. Suspecting that the pains might have somewhat of a rheumatic character, I in some instances caused the patient to make use for a length of time of the remedies which are usually most efficacious in the treatment of diseases dependent on the rheumatic diathesis; and in other cases I have administered the various preparations of iron, zinc, arsenic, and other anti-neuralgic tonics for a lengthened period; but generally none of these modes of treatment seemed to afford any real relief, and by none of them have I ever succeeded in effecting a permanent cure, except in a very limited class of cases. There are some cases where the pain seems to be due to acute inflrmmation, probably of the sacro-coccygeal articulation, or of some of the joints between the several segments of the coccyx itself; and in such cases I have seen great benefit result from the application of leeches over the part, followed by counter-irritation, while the patient was kept at perfect rest, and subjected to other antiphlogistic treatment. I have sometimes tried the use of acupuncture needles; and not unfrequently I have had recourse to the subcutaneous injection of a solution of morphia into the tissues around the coccyx; and this plan of treatment, which is usually so successful in the treatment of local neuralgias, has comparatively seldom had the effect in this disease of relieving the pain, and never, so far as I can remember, of producing a perfect and permanent cure. All kinds of constitutional treatment, and most forms of topical applications, are often, however, almost or altogether of no avail for the cure of this disease; and the only means of obtaining radical relief—and happily it is a means which proves successful in almost every case—is the complete separation from the coccyx of the muscular and tendinous fibres that are in connection with it. To effect this, you must introduce a tenotomy knife underneath the skin, at a short distahce from the tip of the coccyx, pass it along the posterior aspect of the bone, and then divide the muscular and tendinous attachments, first on

one side and then on the other, and finally all round the tip of it. It is not in every case necessary to make such a free division as I have indicated. In some instances division of the fibres of the gluteus maximus of one or the other side will suffice, or detachment from the coccyx of the sphincter and levator ani may be all that is requisite for a cure. This simple operation is easy and rapid of performance, like other examples of subcutaneous surgery is not attended with bleeding, and is attended with no great degree of suffering; and the result is in almost every case instant relief of the pain, and in most cases a perfect and permanent cure of the disease. In illustration of these remarks, perhaps you will allow me to read you the history of a case of this disease which was cured in the manner I have described to you. The patient was a lady from India, who came under my care several years ago; and the history of her case, which I am now about to read to you, was drawn up for me by the lady herself.

"On the 5th November, 1852, while taking my usual morning ride on my favorite horse, about fifteen hands in height, he suddenly shied. I was thrown, and so severely shaken and injured that I fainted on the spot, and could not suffer to be touched or moved for a codsiderable time thereafter. On being taken home I fainted again, from the excessive pain in the lower extremity of my body, which baffled all and every remedy to alleviate or remove; and for six weeks I could neither turn nor attempt to move from my couch. At length I began to get about again, suffering great inconvenience from my accident both in a sitting and reclining posture—the latter especially, which in traveling caused me intense and excruciating torture. Indeed, after traveling some hours in a carriage, I quite dreaded getting up to step out of it, as I could not do so without severe spasms. I returned to England early in 1853, and hoped its bracing climate would speedily rectify all that was amiss with my back; but in this sanguine expectation I was disappointed, and still doomed to drag on a miserable and wretched existence up to the 4th March, 1855, when, as if by magic, I obtained immediate relief from a slight operation performed upon me by Dr. Simpson."

The treatment in this case consisted, I say, of the isolation of the coccygeal bones from the surrounding tissue by means of a tenotomy knife; and the result of this simple operation has proved as satisfactory and permanent as the relief obtained by it was instantaneous and complete. In the case of another lady, from India, who had long suffered from coccyodynia, while I was performing the same simple operation to effect her relief, an accident occurred. I was dividing the last fibres of the coccygeal attachments, when the slender knife gave way, and broke among the dense structures. I told the pa-

tient of it, and she at once raised herself up in alarm to hear of the calamity; but before I had done telling her of what had happened, she had had time in sitting up to discover that she had been cured of her disease, and rejoiced at the discovery. She quickly replied, "Oh! never mind; my pain is gone—let the knife remain." And there, for aught I know, it remains to this day—an illustration of a pathological law to which I have already directed your attention in the course of these lectures—viz., that pieces of iron and other metals may remain in contact with the living tissues, and may lie imbedded in their midst for any length of time, without giving rise to any marked degree of inflammatory action. And the striking effects of this simple operation for the cure of coccyodynia are not confined to those cases where it is had recourse to at a comparatively early period of the disease. I have under my care just now a patient who has been a martyr to it for twelve years past, and who night and day used to suffer great pain whenever she made any movement of the body. Yet in her case, isolation of the coccyx in the manner I have described to you, produced immediate relief, and ever since the operation was performed, a fortnight ago, she has been perfectly free from pain.

I have met with one or two cases of coccyodynia, however, which I have failed to cure by means of this operation; and where division of the muscular and tendinous fibres—even the most complete—and thus setting the coccyx perfectly free and perfectly at rest for a time, has merely eased the pain temporarily without relieving the patient of it altogether. In our patient in the hospital the operation proved thus unsuccessful, and, therefore, I put in practice, what I had often thought of having recourse to, the more radical measure of removing altogether the coccyx or a portion of the bone. This amputation of some of the segments of the coccyx was resolved on the more readily in her case, because in her the several bones of it seemed firmly anchylosed, and it at the same time projected unusually low down, and was turned suddenly inwards at the tip. Making an incision of about two inches in length through the skin stretched tightly over the end of the bone, I exposed the latter, and having separated it from its connection with the soft parts, and divided it between the second and third of its vertebræ with a pair of bone pliers, its two lower segments were easily removed. I have another patient suffering from this disease, in whom I have repeatedly had recourse to the isolation of the coccyx by means of the tenotomy knife, but always with the effect of producing only a temporary relief; and in her case I have long proposed to perform an operation similar to that performed in the patient in the ward, if the results prove as favorable as we desire, and as there

seems at present every reasonable prospect of attaining. Removal of portions of the coccyx is an operation that has been performed more than once before, in cases of necrosis in some of its segments; but I believe its performance under the circumstances I have been describing to you, is altogether novel.

I have said that, as a general rule, the result of constitutional treatment of any kind affords us little hope of being able to cure this disease by its adoption. But, as I have already hinted, there is a class of cases, of which I have seen a few rare instances, where the pain seems to partake somewhat of a neuralgic character, and where I think I have seen the patient benefitted by the use of the remedies which are usually employed for the cure of neuralgic affections. At all events, wherever you find a patient complaining of pain in the coccyx, who at the same time is affected with pains in the other parts of the body, and who has the unhealthy chlorotic aspect common to those subject to neuralgia, you would do well in such a case to put your patient through a course of iron, arsenic, zinc, manganese, or other nervine tonics, or to make her use some of them in combination for a time. By this means you may possibly succeed in curing the coccyodynia and in dispelling her other symptoms; and should that plan of treatment fail in effecting a cure, it will still form a very good and safe measure preliminary to the adoption of the severer but more certain operative procedure. I would only add, in connection with this point, that there is a leash of nerves lying all round the coccyx; and I once imagined that the relief obtained by isolation of the bone was due to section of these nervous cords: but now the explanation of the phenomenon which I have already given you seems to me to be the more probable, and that when the coccyx is separated from the surrounding tissues, no more pain is experienced, because the bone is by this means freed from the action of the muscles formerly in connection with it, and is thus placed in a condition of absolute rest.

As I am speaking of the coccyx, you will allow me to add that, if more attention were directed to the pathologieal and anatomical history of this organ than has hitherto been accorded to it, it would probably be found to be subject to diseases and disorders such as have hardly been even suspected. In the wide field of anatomical and pathological investigation, gentlemen, there is still much room for original observation and research; and the corner of it, to which I am not trying to turn your attention, has hitherto remained entirely unexplored. We have no thesis or monograph of any kind on the subject of the coccyx in its pathological relations; yet the organ is subject to various morbid conditions which are well worthy of careful examination. I have been telling you something about

one of these morbid states, to which I have ventured to give a name and a place in pathology; and now, to interest you still more in the matter, and to show you in what direction inquiry might be most profitably directed, let me briefly indicate to you some of the other lesions to which the coccyx is liable. And, first, a word or two as to the

Injuries of the Coccyx in connection with Parturition.

The coccyx is, as you know, articulated to the lower end of the sacrum by a joint resembling those which unite together the several vertebræ higher up in the spinal column; and this sacro-coccygeal articulation is sometimes found to be inflamed, as a result of injury sustained during the parturient process. While labor is going on, as the head of the child descends along the floor of the pelvis, the coccyx can often be felt to be stretched very much backwards, and under the strain to which they are subjected some of the fibres of the anterior ligaments which bind this bone to the sacrum may be torn and give way, and in the joint thus exposed and injured inflammation is very apt to be set up. I have seen it swell up and become very painful from this cause after delivery; and in one case the inflammation thus set up led to the formation of an abscess. Or without producing any such immediately bad effects, the inflammatory process may subside and end merely in the production of anchylosis of the sacrum and coccyx, and then the evil effects of it may pass unnoticed till the patient comes again to be in labor, when it will be found that the unyielding bone presents a great obstruction to the progress of the fœtal head. A good many cases have been put on record where it was averred that fracture of the coccyx had occurred during labor, and where, probably, the accident was of this nature, that the sacrum and coccyx had become anchylosed together as a result of some foregoing inflammation in the joint; and under the pressure to which the coccyx was subjected during parturition the morbidly adherent bones became again disunited. If the coccyx be turned very much inwards towards the cavity of the pelvis at the time when it becomes united to the lower end of the sacrum, the obstruction which it then offers to labor will be much greater than when it remains in its normal position after anchylosis had taken place, and it may then be found necessary to have recourse to some operative measure to promote the progress, and to admit of the termination of the labor. What operation should be performed in such a case? Some say that it then becomes necessary to destroy the child, and to effect delivery of the mother by means of craniotomy, but if you will observe the course pursued by nature when allowed to terminate such a case unaided, you will find that she has a much simpler plan, which you can easily imitate,

and by following which you may succeed in bringing the labor to a successful termination, without having recourse to the dreadful operation of craniotomy. What nature does in such cases I had once an opportunity of observing in a patient who was confined in the old Lying-in Hospital here. In a former labor this patient had suffered some injury of the coccyx, which ended in its becoming anchylosed to the sacrum at such an angle as to cause it to project inwards towards the cavity of the pelvis, where it now formed a firm and unyielding obstacle to the progress of the fœtal head. For when the head descended to the point in the floor of the pelvis, where the point of the coccyx was protruding, it was there arrested, and remained fixed and immovable for a length of time, when at last, during a strong contraction of the uterus, the projecting bone gave way under the pressure of the child's head, the adherent bones were separated from each other, and the child was speedily expelled. And in every case of this kind, I think it would be better to break up artificially the morbid union that exists between the sacrum and coccyx, than to have recourse to the deadly alternative of the destruction of the infant.

Surgical Injuries of the Coccyx,

by which I mean fractures and dislocations of the bone occurring accidentally and independently of the parturient process, are not of very frequent occurrence in ordinary every-day practice, although a good many cases have been put on record. They were mostly produced by the patient having fallen backwards; and the striking features peculiar to every case are—1. The intense pain suffered by the patient when the coccyx was moved, as in the act of defacation, coughing, or walking; and 2. The instantaneous and complete relief afforded by the reduction of the displaced bone. I should like to cite to you two of the cases of this kind that have been published—one, because you have all the more common symptoms of the injury very concisely and touchingly recorded; the other because of the peculiar manner in which reduction of the dislocation was effected.

Smetius, a Professor of Medicine in the University of Heidelberg in the end of the sixteenth and beginning of the seventeenth century, has left a kind of diary on record of some of the most interesting cases that fell under his observation during the space of forty-eight years, and among other entries there occurs the following delectable entry: "1588, October 27th.—My wife has fallen backwards, and so injured the coccygeal bone, that she can not sit without great pain, nor can she empty the bowel or the bladder, or cough without much distress."

In the "Ephemerides Medico-Physicæ," one Gustavus Casi-

mirus Gahrliep tells of an accident that befell his father-in-law, an old septuagenarian, who in descending the steps of a place when they were slippery with ice and snow, lost his footing, and fell with the lower end of the trunk against the stone stairs. He sustained a fracture of the os coccygis in consequence, but said nothing about it to his daughter, a young girl, who was the only person living with him at the time. He could get no passage in his bowels; and his daughter, believing this to be the cause of the distress which she saw him laboring under, administered some aperients, but without affording any relief. He had beeome seriously ill on the fifth day, when he spoke of his accident to a sagacious friend, who told him that perhaps his spine was injured, and advised him to allow himself to be rolled and tumbled and pushed about, as he lay on a wooden couch, by two robust women. He followed his friend's advice, and with the happiest result; for by the jostling the end of the os coccygis which was bent inwards was restored to its situation, and the obstruction being removed the bowels were moved *cum impetu sumno.*

Allow me to quote a third case, which will show you in what a simple manner this accident may sometimes be occasioned. Tobi a Meek'ren, an old surgeon of Amsterdam, gave to the world in his *Medico-Chirurgical Observations*, among other cases, one in which this accident—dislocation of the caudal bones—took place. The patient, he tells us, was a female, addicted to the sect of the Ana-baptist, who went to the watercloset, and not knowing that the lid was down, suddenly injured her coccyx, so that she could neither sit nor stand, and was obliged to be carried to bed. On the second day the pain became greater, and she fevered and got convulsions; and then Meek'ren was called in in consultation with her ordinary attendant. They suspected the nature of the case, but the modest lady would not allow herself to be touched. But during the night her sufferings became so intolerable that her medical advisers had to be summoned again early in the morning; and this time they were allowed to reduce the dislocation which afforded her instantaneous and complete relief.

But besides being liable to be turned forwards, whether as a result of inflammation or injury during the process of parturition, or as the effect of direct violence from a fall or blow, the coccyx is found in some cases to project unusually far backwards. I do not refer now to those cases of which there are some few on record, and in which this dislocation of the coccyx backwards has been produced during labor, and has remained afterwards as a permanent but unusually painless condition; the variety I allude to belongs rather to the class of

Malformations of the Coccyx.

In the woman in the hospital the coccyx was unusually straight, and the general inclination of the bone was somewhat backwards, although the last segment of it was turned rather abruptly forward and projected towards the rectum. In her case it is not easy to determine whether this condition of the bone was present from birth, or was the result of some injury in after life. But in a late number of the *Dublin Medical Press*, Dr. Wilson gives an account of a patient with a projection resembling a tail, attached to the lower end of the spinal column; and in the last number of the same journal there is a paper by Dr. Jacob, reprinted from the *Dublin Hospital Reports*, in which he describes a tumour of this kind that had been amputated by his father, and in which he speaks of a family several of whose members presented this remarkable variety of malformation. In the *Chronicles of Lanercost* it is related that the Norman sailors used to believe the Englishmen to be furnished with tails, and when they had to execute them they hung them always with a dog alongside, thus acticipating the principle of *similia similibus*.

Deficient Development of the Coccyx

has sometimes been seen as a rare instance of deformity. The number of segments is liable to much deviation; but its total want, or its existence in merely rudimental condition, is rare. Perhaps the most frequent and striking instance of this kind of deformity occur in the domain of Comparative Anatomy. Thus in the Isle of Man there is a breed of cats, all the members of which are born without tails, the coccygeal bones being reduced in number to a very few, and these rudimentary in character. Absence of the caudal bones, I repeat, in man is a rare phenomenon, although their existence at all is not often suspected by those who have no knowledge of anatomy, some of whom have entertained the most singular ideas on the subject. Perhaps no theory was more singular than that of Lord Monboddo, an old Scottish judge, who believed that the absence of the tail was a phenomenon peculiar to the modern human races, and that the modern curtailment of this appendage was a result of their higher degree of civilization. The worthy judge, at an early period of his investigations, believed that we must all be still born with tails, and that possibly the wise women and the doctors cut or twisted them off the moment the child was born. It used even to be told against his lordship, that on one occasion when an addition was about to be made to his own family, he was caught hiding in the bedroom, in some corner of which he had secreted himself with a view of watching all the proceedings, and witnessing for himself the removal of the new-born infant's tail.

TUMOURS OF THE COCCYX—DOUBLE MONSTROSITY BY INCLUSION.

But leaving the mythical and mysterious part of the question, let me call your attention to the sketch of the posterior aspect of an infant, whose entrance into the world created a great deal of noise some three years ago, and regarding whom a paragraph appeared in many newspapers, headed, "CURIOUS MONSTROSITY—A CHILD BORN WITH A TAIL." The case occurred in the practice of my friend Dr. Richardson, of Stock-on-Tees, who relieved the child of its extraordinary appendix by amputation, and who had the kindness to send me the tumour for dissection along with this sketch of the child taken before the performance of the operation. The tumour, which is of an oval form, and about six inches in length by four in breadth, was attached to the skin of the back opposite the middle of the sacrum by a narrow rounded neck of about an inch in diameter, through which two or three small vessels passed into the tumour. At the lower end, which projected slightly beyond the level of the folds of the nates, there was a slight depression, through which a point of bone could be distinctly felt, while from the upper extremity, on the surface which was turned towards the back of the infant, there grew a projection about two inches in length, which bore a perfect resemblance to a finger or toe, containing, as it did, two bones like phalanges, and being furnished at the tip with a well-developed nail. The skin of the child's back immediately surrounding the point to which this tumour was attached was altered in character, and resembled in appearance the mucous membrane of the lips, while the skin in contact with this peculiar structure was thickly covered with hair. The child was in perfectly good health; and, Dr. Richardson very wisely determined upon relieving it of its extraordinary encumbrance, which he succeeded in doing with perfect safety by first tying a cord round the neck of the tumour, and then cutting it off beyond the ligature. There was no remarkable degree of hemorrhage, only one vessel requiring to be tied; and the infant showed no bad symptoms afterwards, while the wound speedily closed. On dissection, the tumour was found to consist of a mass of fat enveloped in skin, and containing in its midst a long bone, running nearly through the entire length of the growth, while a number of vessels and nerves came through the neck and were distributed throughout the mass. The bone was well ossified and invested by periosteum; but it does not present a sufficiently well-marked resemblance to any of the bones in the human skeleton to enable us to decide as to its real nature. It bears more resemblance to a tibia, however, than to any other bone. Towards the upper end of the one side it has attached to it a portion of tissue, redder in color and denser

in texture than the rest of the substance of the tumour, and almost resembling muscle in appearance.

Now, what is the nature of this curious caudal appendix? It is simply an instance of a kind of malformation which occurs when two ova have been impregnated, and when only one of the fœtuses comes to maturity, while the other is blighted at an early stage, and arrested in its development, but becomes adherent to some part of the body of its co-twin, where it appears at birth in the form of a tumour. Tumours of this kind may be found adhering to different parts of the bodies of infants, and we occasionally meet with cases where they are attached to the very lower extremity of the trunk and in connection with the coccyx or region at least of the coccyx.

BRUNONIANISM, TODDISM, AND OTHER ISMS.

A paper read before the Philadelphia County Medical Society, November 14th, 1860, by Samuel D. Gross, M.D., *Professor of Surgery in the Jefferson Medical College.*

The revolutions in medicine have been almost as numerous as the revolutions of empires, and hardly, if indeed any, less disastrous in their effects upon human life. The checkered arch which spans its horizon has every where inscribed upon it, in legible characters, the words change, change, change. Every age has had its medical absurdities and inconsistencies; and, judging from the tendencies of our own, it is evident that the times are sadly out of joint in these particulars. As fast as one delusion, enslaving the professional mind, disappears, another springs up to take its place; and thus it probably ever will be, for fickleness and instability are written upon all human things. God and truth alone are immutable.

Bacon was a firm believer in charms and amulets; Martin Luther thought there was great efficacy in toads; Boyle held that the thigh-bone of an executed criminal was a specific for dysentery; Berkeley humbugged his countrymen with the virtues of tar-water; and, in comparatively recent times, Perkins set the world agog with his metalic tractors. Mesmerism was rampant in France in the latter part or the last century, and after having been almost forgotten, reappeared in this country, in all its pristine vigor, not more than twenty years ago, under the fostering care of more than one *eminent* professor. Clairvoyance, too, has had its day; Homœopathy, Chrono-Thermalism, Thompsonianism, Hydropathy, and other kindred delusions are stalking through the land, entrapping the credulous and unwary, and consigning thousands of human beings annually to a premature grave. In Germany and Switzerland the

whey and grape cures are at this moment all the rage in the treatment of chronic diseases. What the next humbug will be, time will soon determine.

To a person of a calm, sober, and reflecting mind, all this does not appear strange. Such a result is perfectly natural; a necessary consequence of man's credulity, weakness, and craftiness; of the imperfections of his observing and reasoning faculties. Diversity of thought and action is one of the great prerogatives of our nature. The saddest calamity that could befall the human race would be that in which all men should regard objects from one common stand-point. All efficient progress would instantly cease. The mental world would sink into inertia. Providence has wisely ordained that there should be conflicts of sentiment aud varieties of pursuit. It is only when these diversities assume a monstrous form that they are liable to become objects of mischief, involving the best and dearest interests of society. Medical science has largely participated in these blessings and these evils; it has always had its ebbs and flows, its currents and counter-currents. The greatest divergence of opinion still prevails concerning the pathology and treatment even of many of the more common diseases. The profession is full of skeptics. Is it surprising, then, that some master-spirit should occasionally rise up to startle the world, and to dazzle it with the rays of his genius, uprooting, like the storm that sweeps over the earth, and demolishes nature's fairest works, all our preconceived ideas of pathology, and thus unfitting us for the adoption of a rational therapeutics? Such an occurrence can not, in the very nature of things, be expected to be infrequent; and all experience has shown that the lesser lights of the profession are ever ready to gather round the new luminary as moths gather round the flame of a candle. With little or no thought of consequences, with no pains to investigate the claims of the new candidate to public favor, and dead to the promptings of common sense, they fall an easy prey to every new doctrine, or new mode of practice, however visionary and absurd. Novelty is with them a new species of existence, a kind of hysterical illusion, which they hail as a plesant change, because it is always followed by excitement, so necessary to their happiness. Their motto, forthwith, is "jacta est alea," and they accordingly enroll themselves under the new banner with all the ardor and enthusiasm of patriots, if not martyrs.

The very stability, then, of medical science and doctrine is often, if indeed not generally, attended with salutary results. The inquiry which is sure to follow in its wake seldom fails to put the erring mind again into its proper track. Like a drunken peasant on horseback, to use one of Luther's similes, it may now be on this side of the saddle, and now on the other,

but it will be sure, in the end, to recover its equilibrium. The atmosphere of medicine, like that of law, politics, and even divinity itself, requires occasional ventilation.

If there were no changes in medical doctrine and practice, there certainly could not be any healthful professional progress; the science would become stagnant, and be incessantly in danger of relapsing into barbarism. There is, then, I repeat, something salutary in these revolutions, something positively useful; and yet it can not, on the other hand, be denied that they often carry with them much that is absolutely hurtful, both as it respects the interest of medical science and the good of the human race.

Considering the frequency of these revolutions, their pervasive influence, and the vastness of their importance not only to the profession, but to mankind at large, it is surprising that there is not in the English language a solitary work in which they are comprehensively and philosophically discussed. No where are they brought out in bold and prominent relief. To the scholar of leisure, and of the requisite clinical experience, there is, in my opinion, no field, the thorough and successful exploration of which holds out so many inducements for exertion; so much prospect of reimbursement in fame and usefulness. To do full justice to the enterprise, the individual should bring to it the possession of vast learning, a discriminating mind, an untiring industry, united with an ample practical acquaintance with medicine and the collateral sciences, and an ardent love of his profession. It should be the work of a long lifetime; any thing short of this would only end in disappointment. The study would demand a thorough knowledge of contemporaneous history, an extensive acquaintance with the different sects of philosophy, and a profound inquiry into the character of disease as it has prevailed in different parts of the globe, with an account of the modifying influences of climate, soil, society, and occupation.

It requires no prophetic eye, no special forecast, to discover that we are on the very verge of one of the most fearful and wide-spread revolutions in medicine that the world has ever witnessed; another of those astounding changes whose name is already legion, and which, whether for good or for evil, is destined to convulse the profession, and to exert a most powerful influence upon the practice of the healing art. If this statement be true, as the sequel will show it is, is it not proper that we should pause and inquire, "Watchman, what of the night?" Is it right that we should calmly fold our arms and be silent spectators of the scenes around us, without taking an active interest in them? There is an impending crisis in our profession, and it is the solemn duty of every medical practitioner to meet this crisis in a manly and philosophical

spirit. The question is not one of an ephemeral character, or one of unconcern; its solution is one of the deepest moment, involving the health, the lives, and the happiness of millions of human beings, born and unborn. Its correct solution is of far greater consequence, in its present and remote bearings on the civilized world, than on any political question that has been agitated during the last half century. If this crisis can not be averted, its crushing effects may be incomparably greater than those of the bloodiest war, or of the most unrelenting epidemic that has for ages spread its desolating mantle over the earth.

The tendency on the part of the medical profession, both in Great Britian and in this country, at the present moment, is the abandonment of all active depletory measures and the employment of stimulating ones, upon the assumption that there has either been a material change in the type of disease, or that there is in all inflammatory affections a peculiar toxic state of the blood, rendering mankind incapable of bearing the same active treatment as formerly. So deeply rooted has this opinion become that many practitioners have already entirely discarded the use of the lancet, purgatives, tartar emetic, and other depressants. Some of them even coincide with the late Dr. Todd, of London, that leeches can no longer be applied with safety.

In order to do any thing like justice to this subject, it is necessary to inquire, first, whether there has really been any change in the type of disease, as has been so confidently asserted by some of the advocates of this doctrine; and, secondly, whether there is any foundation for the belief that people are less capable now than formerly of resisting the effects of active depletory remedies. I shall endeavor to show, during the progress of the discussion, that both these views are untrue; or what is the same thing, that they have had their origin in misconception and superficial observation, if not in a willful disposition to misrepresent and distort facts, in order to render them subservient to the creation of a new theory in medicine, and the establishment of a temporary notoriety.

The idea of the exclusive employment of stimulants in the treatment of inflammatory affections is not new. To go no further back than the last century, it will be found that it enjoyed a remarkable popularity, not only in England, but also in certain parts of the Continent of Europe, especially in Italy and Germany. Under the name of the Brunonian system, it exercised an extensive sway, for nearly twenty-five years, over the minds of many otherwise enlightened practitioners, whose enthusiasm seemed to have been carried away by it to the utmost stretch of the imagination. Many of them indeed, supposed that they had actually discovered the philos-

opher's stone, in regard to the treatment of disease, and they openly thanked God that they had been made the humble recipients of this great blessing. John Brown, the author of this practice, was almost deified. He pretended to have made a stupendous discovery, founded mainly upon reflection and his own personal suffering. All diseases were regarded by him as sthenic and asthenic; this was his only classification, and the treatment which he erected upon it was essentially stimulant or supporting.

The biography of this remarkable personage deserves brief notice in connection with his celebrated doctrine, inasmuch as it will serve to bring out the latter in somewhat bolder relief, and show how easy it is for a man of genius to become the founder of a new sect.

John Brown was descended from poor, illiterate parents, his father having been an ordinary day-laborer. He was born at Bunckle, in Berwickshire, Scotland, about 1736. At an early age he was bound as an apprentice to a weaver, but having no taste for the loom he soon revolted and left his master. He was sent to the grammar school at Dunse, where he pursued his studies with so much ardor and success as to be universally regarded as a prodigy. In the summer he worked in the field in order that he might secure the means of improving his mind, which was now the chief object of his ambition. After struggling on in this manner for some years, he became an assistant in the school, and finally resolved to enter the ministry, attaching himself to the sect of Seceders. His habits at this time are described as having been most regular, and so extraordinary was his piety that it was supposed that he would become a great and shining light in the church. By degrees, however, he relaxed in religious enthusiasm, and, uniting himself with the Scotch establishment which he had originally so much detested, he soon renouuced divinity altogether. He remained at the grammar school till near the age of twenty, earning great reputation as an accomplished scholar, being especially distinguished for his uncommon proficiency in Latin, which he read, spoke, and wrote with great fluency, if not positive elegance. Determined to turn his knowledge to advantage, he settled at Edinburgh, as a teacher of Latin, and as a translator of English into Latin theses; in other words, John Brown became what was then and is still known as a *grinder*. He also attended the medical lectures in the University; and in order to support himself and his family—for he was now married—he opened a boarding house for medical students. In time he became intimate with Cullen, who was so fascinated with his talents and attainments that he was induced to employ him as a private tutor in his family, and at length permitted him to give an occasional evening lecture, in

which he had the assistance of the notes of the professor's morning discourse. The friendship, however, which had thus sprung up, was of short duration; Brown's boarding house scheme failed to afford him the means of a livelihood, and being disappointed in obtaining the chair of Theoretical Medicine in the University, in his application for which he had largely calculated on the influence of Cullen, an open and permanent rupture took place between them, followed by a determined enmity on the part of the protege toward all the medical professors of Edinburgh.

Thus thrown again upon his own resources, he lost no time in delivering a course of opposition lectures, in which he ridiculed the teachings of Cullen, and gradually developed his new doctrine, finally embodying its principles in his "Elements of Medicine," published in 1780. His time was now chiefly spent in expounding his new theory, and in carousing with his dissolute companions, of whom he had not a few, both in and out of the profession. He was frequently intoxicated, and neglecting his business, he became so reduced in circumstances as to be committed to prison for debt, where, such were his powers of fascination, his pupils continued to attend his lectures. Disgusted with Eninburgh—for he had now neither friends, nor practice, nor money—he quit Scotland and settled in London, in the hope that a change of residence might bring with it a change of fortune. But, alas! no such result ensued. His career in the English metropolis was as short as it was inglorious. Worn out by intemperance, chagrin, and disappointment, he died, in utter poverty and obscurity, in 1788, at the age of fifty-two, of apoplexy, brought on by an overdose of laudanum, taken, as some have supposed, for the purpose of self-destruction.

John Brown was a firm and enthusiastic believer in the truth and value of his own doctrine. Having early become a victim to gout, he daily took large quantities of alcohol and laudanum to relieve his suffering, and the consequence was that he was seldom entirely sober. On one occasion, in order to afford a practical illustration of his views, he invited, as he himself declares, some of his most zealous and intelligent disciples to dinner. Before they sat down to the table, he hobbled about the room with great difficulty, his leg being swelled and so excessively painful that he was unabled to put it upon the floor; but after the bottle had been freely circulated, and the master had become partially intoxicated, he recovered the use of the parts so completely as to move them with the greatest facility. When engaged in lecturing, he generally had at hand a bottle of whisky and phial of laudanum, taking a glass of the former and from forty to fifty drops of the latter whenever he felt at all languid, repeating the dose perhaps not less than

four or five times during the exercise. "Between the effects of these stimulants," says Dr. Beddoes, one of his biographers and most enthusiastic admirers, "and voluntary exertion, he soon waxed warm, and by degrees his imagination was exalted into frenzy."

Such is a brief sketch of the life and character of John Brown, the founder of the so-called "Brunonian system of medicine." That he was a man of genius and possessed of a vivid imagination, with a superior classical education, his career abundantly attests. That he was lax in his principles and debauched in his habits is equally true. Moreover, he was vain, ambitious, unscrupulous, and not always truthful. One of his greatest sins was ingratitude toward Cullen, who, notwithstanding Brown's assertion to the contrary, was for many years his sincere and devoted friend, and who spared no pains to advance his interests so long as he could without compromising his own dignity. "But," to quote the language of Beddoes, "friendships originating in protection are very prone to terminate in enmity, unless difference in rank and pursuit totally precludes competition; and it is well known that the friendship in question was far from permanent."

The opinions of Brown exerted so wide a sway in Great Britian as to affect, for a time, the whole practice of medicine. In Italy his works were translated by the celebrated Rasori, with notes and annotations; and so great was their influence in that country that there was hardly an intelligent pupil who did not openly avow himself as a Brunonian. The "doctrine" also speedily found its way into Germany and France, in both of which, but especially the former, it made numerous converts, and long maintained its hold upon the profession. In a number of the continental universities its principles were formally expounded by the professors. In Germany, writes an anonymous author, Brown was hailed as the medical Luther, and so great were the dissensions among the pupils of some of the leading schools in regard to the claims of the Northern Light, that it was not uncommon for them to come to blows. At Gottingen, the Brunonians were so rebellious as to require the authority of the military to keep them in subjection. Of the extent to which the new doctrine had enslaved some of the German practitioners, a correct idea may be formed when it is stated that, at the hospital at Bamberg, the attending physician, Dr. Marcus, a man of eminence, considered himself justified in distributing, as an average allowance, among nearly five hundred patients affected with various kinds of diseases, a drachm of opium, with three times that quantity of camphor and a pound of alcohol, together with numerous other stimulants.* This was at the close of the last century. In 1782,

* Edinburgh Medical and Surgical Journal, September, 1860, p. 259.

two years after the publication of the "Elements," Brunonianism had reached its culminating point at Edinburgh. Poland, Russia, and Spain also suffered from the infection. In time it penetrated even into India, its most able and enthusiastic advocates in that country being Dr. William Yates, and Dr. Charles Maclean, of the General Hospital, at Calcutta. These physicians gave an able and lucid exposition of the new doctrine in a short tract, published in the latter part of the last century, under the title of "A View of the Science of Life on the Principles established in the Elements of Medicine, by the late celebrated John Brown, M.D."

In the United States the works of the founder of the Brunonian system were republished at Portsmouth, New Hampshire, in 1803, and were extensively read by the physicians of that period, not a few of whom became its converts, either wholly or in part.

The fundamental propositions of John Brown are few and simple. "Life," he says, "is a forced state;" and he calls the quality or principle on which its phenomena depend excitability. This excitability, of which a certain amount is allotted to every animated being, is seated in the medullary portion of the nerves and in the muscles, and varies not only in different classes of animals, but in the same animal at different times. When most intense, the animal is most vivacious or susceptible of the action of exciting powers, as the various external impressions — heat, air, food, wine, poisons, contagion, the blood, and secreted fluids — or muscular exertion, the passions and mental emotions. The excitement thus occasioned may be too great, too small, or in just measure. When too great, the excitability becomes defective, and weakness is induced, called indirect debility; when too small, as when the exciting powers or stimulants are withheld, direct debility is the result, because the excitability then exists in excess. Every power that acts on the living frame is a stimulant, and if this exciting power is withdrawn, death ensues as certainly as when the excitability is gone. When the excitement is natural, or in just proportion, health is the result. All diseases, according to this system, are sthenic or asthenic; that is, they are attended either with excitement or with exhaustion.*

The stimulant treatment of John Brown was, as has already been stated, essentially based upon the relief which it afforded him in his arthritic attacks. His first seizure occurred when he was in the thirty-sixth year of his age, in consequence, as he alleges, of abstemious living during the previous six months. Subsequently he noticed that he was peculiarly prone to this kind of suffering whenever he relaxed in his dietetic habits,

* Beddoe's edition of Brown's Elements of Medicine, p. lxii. Portsmouth, N. H., 1803.

until he at length became satisfied that the best remedies for his complaint were nutritious food and alcoholic stimulants. These facts are all clearly stated in the preface to the original work, the Elementa Medicinæ. "The author of this work," says he, "has spent above twenty years in learning, teaching, and diligently scrutinizing every part of medicine. The first five passed away in hearing others, in studying what he had heard, implicitly believing it, and entering upon the possession as a rich and valuable inheritance. His employment, the next five years, was to explain more clearly the several particulars, to refine and give them a nicer polish. During the five following years, nothing having succeeded to his satisfaction, he grew indifferent to the subject; and, with many eminent men, and with the very vulgar, began to deplore the healing art as altogether uncertain and incomprehensible. All this time passed away without the acquisition of any advantage; without that which of all things is the most agreeable to the mind, the light of truth; and so great and precious a portion of the short and perishable life of man was totally lost. He was, at this period, in the situation of a traveler in an unknown country, who, after losing every trace of his way, wanders in the shades of night; nor was it till between the fifteenth and twentieth year of his studies that a faint gleam of light, like the first break of day, dawned upon him."

It is hardly necessary to say that the doctrines of Bennett, Todd, and others, in regard to the treatment of inflammation by stimulants, now attracting so much attention, are essentially the tenets of John Brown, either bodily, or under certain modifications. Mr. Bennett is not, it is true, like Alison, a believer in a change in the type of disease, but his treatment is essentially supporting in almost every form and stage of disease; and a similar practice is inculcated, only more pointedly and with less reservation, by the late Dr. Todd, who, however, avowedly discards the idea of sthenic and asthenic affections insisted upon by Brown. But Brown, although he divided all maladies into these two great classes, was rarely, if ever, known to employ the lancet and other depressants; on the contrary, his practice was essentially stimulant; it was always so in his own person, and in the few cases which were under his charge at Edinburgh; for, be it remembered, John Brown had hardly any professional business, and he was known in the medical circles of the Scottish metropolis merely as a theorist. If I am correct in my conclusions in regard to the Brunonian practice, it follows, as a necessary consequence, that it was essentially similar to the practice so strenuously inculcated at the present day; it certainly amounts to the same thing, only that the modern school carry, if possible, the stimulant treatment still farther than the Brunonians did.

Taking Dr. Todd as a type of the new school, let us briefly inquire into the character of his pathology and therapeutics, as set forth in his work on acute diseases, published only a few days before his lamented death, in 1859.

An attentive perusal of this treatise conclusively shows that he was a thorough and uncompromising humoralist. His pathology was based essentially upon the assumed existence of a poison—*materies morbi*—in the blood, for the elimination of which he employed sustaining measures in all acute inflammations from the very commencement of the attack, hoping thereby to anticipate and prevent depression of the vital powers. Starting with this fundamental doctrine, he contends that all diseases are necessarily asthenic, inasmuch as they always cause undue waste of tissue; that there is a tendency in most, if not in all, diseases to a natural cure; and that the treatment of the physician can be of use only in so far as it may assist in neutralizing the poison upon whose presence and operation in the system diseases depend; in other words, that our drugs or remedies are mere antidotes, incapable of exerting any other influence over morbid action. At the head of the list of stimulants he places alcohol, which, if we are to believe him, not only increases the animal temperature and strengthens the heart, but acts as an aliment, nourishing and sustaining the nervous system in a manner and in a degree superior to those of any other kind of food. One of the most important effects ascribed to it by Dr. Todd, in the treatment of all acute inflammatory diseases attended with exhaustion and high fever, is the prevention or mitigation of delirium. With this object, he enjoins it to be given frequently, and in such quantities as experience has shown can be most easily assimilated, a good average dose being from two drachms to half an ounce, diluted with water, every hour, or even every half hour. He also insists upon its early exhibition under such circumstances, and of its action being aided by nutritious food and suitable anodynes, to allay pain, induce sleep, and tranquilize the affected structures.

Such, in few words, is Toddism. In what essential respects does it differ from Brunonianism? Not in a single one, so far as treatment is concerned. The whisky juts out equally prominently in both systems, although Dr. Todd doubtless administered it with more judgment than his ingenious but unfortunate prototype.

I come now to consider very briefly the two great questions proposed for discussion in this paper, namely: First, is there really, as has of late been so frequently alleged, a change in the type of disease? and secondly, is it a fact that people are no longer able to bear the same depletory measures, when laboring under inflammation, as formerly?

In regard to the first of these questions, I unhesitatingly reply in the negative. I have certainly not seen anything, in a practice of upwards of thirty years, to warrant such an opinion. To me diseases appear as they did when I entered upon the study of medicine. I am speaking now more especially of inflammatory affectious, whether idiopathic or traumatic, as they ordinarily manifest themselves to us in the daily routine of practice, and not of epidemics, which, as is well known, always wear a peculiar livery in consonance with the peculiar nature of their exciting causes. These diseases, comprising erysipelas, typhoid fever, scarlatina, measles, small-pox, cholera, yellow fever, pneumonia, and other kindred affections, are seldom precisely alike during any two successive visitations. They are subject to constant fluctuations, arising without any assignable cause, leading to remarkable variations in their mortality, and requiring essential modifications of treatment. But there is no change of type, properly so called, even here. Whoever will take the trouble to inquire into the history of epidemics, as they have prevailed in different ages and in different countries, cannot fail to be impressed with the truth of this remark. To refer only to one of these epidemics, scarlet fever, who does not know that it is at one time so violent as to decimate an entire community, or destroy entire families, while at another it is so slight as to pass almost harmlessly over an entire country?

But if we take the ordinary inflammatory diseases, idiopathic and traumatic, of the human race, those which are liable to assail all persons, of whatever age, rank, or occupation, the only changes to which they are liable are such as are dependent upon individual peculiarities, growing out of their mode of living; that is, the nature of their food and drink, their residence, occupation, and social relations, and the state of their health at the time of their seizure, more particularly the state of the blood, the secretions, and the digestive apparatus. All these circumstances modify disease, and consequently demand a corresponding change of treatment. But in point of fact the morbid action is essentially the same; it may vary in degree but not in character. Its type, its essence, is the same. The blood-vessels at the seat of the disease are in the same condition; the deposits are of the same nature; the vessels may be more distended or less distended, more brittle or less brittle; the serum may be more abundant in one case than in another; the lymph may be plastic or aplastic; the pus may be laudable, sanguinolent, or fibrinous. These are mere individual differences, dependent upon accidental circumstances and not upon any changes in the type of disease. A furuncle, a carbuncle, an erysipelas, a whitlow, a conjunctivitis, exhibit the same characters, both outwardly and inwardly, now that

they did ages ago; and if this be true of the external inflammations, may it not be justly inferred that it is true also of the internal, as pneumonia, pleurisy, hepatitis, cystitis, gout, and rheumatism? I can myself discover no differences between the inflammations which supervene upon wounds, sprains, contusions, fractures, and dislocations of the present day and those which were wont to meet my eye from these causes in my early professional life, save, of course, what are due to individual peculiarities. Their type is essentially the same now as then. Recovery and death are governed in both forms of these inflammations—idiopathic and the traumatic—precisely by the same laws. The same causes which were in operation in producing ordinary inflammation thirty years ago, are in operation now, and the results must therefore be similar. Our habits and modes of life, our food and drink, our emotions and passions, are the same to-day as yesterday. The same sun and moon and stars afford us light and heat; we walk upon the same earth; we breathe the same air. Nature has not been upheaved by any unusual convulsions; the laws of God move on in their accustomed order.

There is no evidence, certainly not on this side of the Atlantic, of any serious physical degeneracy of the race in any walk or pursuit of life. The gardener, the plowman, and the dairymaid are as hale and robust as they have ever been. The blacksmith's brawny arm makes as much noise with the hammer upon the anvil as in the days of his ancestors. The carpenter, the mason, and the drayman have shown no diminution of manly vigor. The soldier wields the sword and musket with as much ease as he ever has; and the mariner is as justly entitled now to the appellation of "hardy" as he was at the battle of Aboukir, Trafalgar, or Lake Erie. Man's weight and statue, muscular development, and the quantity of his blood, have undergone no perceptible change within the last thirty years.

From all these facts, we infer that ordinary diseases are incapable of undergoing any cyclical changes of type, and that what have been regarded as such have had their origin in the mind of the physician and not in the body of the patient. In short, that all such opinions are imaginary and not real.

Brunonianism was essentially based upon the assumed inability of the people to bear depletory measures when laboring under inflammation; and yet it must strike every one as a most singular coincidence that, while the practitioners in many parts of Europe were pouring stimulants by the wholesale into the stomachs of their patients, Rush of Philadelphia was indulging in the most copious abstractions of blood, even during the epidemic yellow fever of 1793 and 1797, and busily engaged in laying the foundation of the bleeding school, whose

influence was destined to last the better part of the third of a century. Surely no one will contend that this difference in the practice of the two countries at that period depended upon any material difference in the constitution of the people, or change in the type of disease.

The great error of the Todd School is the assumption that all diseases are due to a toxic condition of the blood. That some poison or other does exist in the system in certain affections, as erysipelas, scarlatina, pyæmia, and typhoid fever, is highly probable; at all events, such an opinion is now very common among physicians; but it is surprising that a man of the mental acumen of Dr. Todd should have made a general application of such a doctrine, and thence drawn the conclusion that all diseases require a stimulating plan of treatment in every stage of their progress.

Entertaining these convictions, I need hardly say that the idea that all inflammatory diseases should be treated with stimulants, has not only no foundation in truth, but is at direct variance with the best interests of the sick, and the reputation of the physician, considered as an enlightened, honest, and conscientious man. It can be clearly shown that such an exclusive system of medication is based either upon superficial observation and hasty generalization, or, what is worse and more reprehensible, upon a desire, on the part of those who have given currency to it, to become the founders of a new sect of medicine, with a view of gratifying selfish and ambitious purposes. It is difficult to conceive how any physician, enlightened by clinical experience, could bring himself by any process of reasoning or of logic to such a conclusion. If the opinion were a mere abstraction, it might be regarded as an ingenious quibble, calculated to excite our curiosity, perhaps our risibility; but it is very different when it is presented for our adoption at the bedside. It then assumes a more imposing attitude, and exibits itself in all its naked deformity, as a monster ready to engulf whoever is credulous enough to put his trust in the skill of the physician.

The only rational mode of treating disease is to individualize every case and to permit it to make its own laws, these laws having reference to the nature of the exciting cause, the peculiar structure involved, the period that has elapsed since the commencement of the attack, and, lastly, though not least, the state of the system immediately preceding the outbreak of the malady, as well as at the time of the physician's first visit. It is only by such considerations as these that the practitioner can hope to do full justice to his patient, and to preserve the honor and dignity of Hippocratic medicine. He must not view disease through the murky eye of prejudice, or approach the bedside with his mind filled with preconceived notions of

debility or plethora; but he should so examine the case as to be able to give a just and satisfactory reason for the faith that is in him. If the stimulant school see nothing but reduced action or depressed vital power, it proves pretty conclusively one of three things, namely: either that they are incapable of making accurate observation, that they are blinded by prejudice, or that they have to deal with a class of patients whose habits and conditions are such as to forbid the employment of any other method of cure.

But we can certainly not suppose that the great advocates of the stimulant mode of treatment are not accurate observers; they are men of too much ability, mental discipline, and sober judgment to lend coloring to such an idea. Shall we accuse them of prejudice? All men are more or less under the influence of this passion, and it may, therefore, be assumed that the wisest and best of the advocates of this doctrine are not altogether exempt from it; nevertheless, no one could justly ascribe to them such a sin. What, then, is the source of this practice? Discarding these two conjectures as untenable, are we to conclude that these pathologists have no other than broken-down, worn-out, or decrepit patients, the residents of crowded cities, and the inmates of foul, ill-ventilated hospitals? Here, again, our proof is at fault; for while it may be supposed that both Todd and Bennett saw mostly persons of this description, it would be absurd to imagine that they had not also sometimes met with a stout, robust one, capable of bearing almost any amount of depletion and starvation. Has not Dr. Bennett himself afforded a complete refutation of this supposition in his own case of pneumonia, for the relief of which he was so copiously bled by one of his colleagues? Is it the stage of the disease that has produced this change of sentiment? Here, again, there is nothing positive, although it may reasonably be inferred that these practitioners are not always called in after the disease has committed such ravages as to admit of relief only by supporting measures.

It is well known that fashion has its influence in our art as in every thing else. An ingenious tailor or mantua-maker often revolutionizes, by a mere stroke of the scissors or the addition of a trifling embellishment, the costume of an entire nation. It has already been seen how a dissolute doctor, who for many years hardly ever drew a sober breath, and who probably never had a hundred patients in his life, became the founder of a new sect in medicine, which maintained its sway for nearly a quarter of a century, its sole basis being the relief which he experienced in his own person from alcoholic potations and laudanum, whenever he suffered from an attack of gout, to which, for many years, he was a victim. Unity of disease and the lancet were the great weapons in the hands of

our illustrious countryman, Rush. Purgatives were all the fashion in the days of Hamilton. Dyspepsia was the absorbing complaint with Abernethy and Phillip. In the time of Faithorne and Johnson every body had disease of the liver; and it is within the recollection of the elder members of the profession what an influence the doctrine of spinal irritation exercised upon the minds of practitioners, both in the Old World and the New, in the moulding of their views of pathology and practice. Broussaisism strutted for a while triumphantly upon the stage on the basis of gastro-enteritis, leeches, ptisans, and gum-water. Cookeism rejoiced in an obstructed portal circulation, in vitiated bile, and in the R. A. C. pill, as it was called, a compound of rhubarb, aloes, and calomel. With some everything is a change in the type of disease; and both with them and Todd and John Brown, the only safety for the patients is in alcohol and other kindred remedies. Bleed the patient and he dies; purge him actively, and if he is not killed outright, his recovery will be greatly retarded, and his constitution, perhaps, irreparably damaged. Just now, the cellular pathology of Virchow is coming into notice with all the authority and prestige of an eminent foreign teacher, and it is not difficult to foresee to what extent it is destined to enslave the medical mind of this and other countries.

Although most medical men, as well as the community at large, view blood-letting at the present day with a kind of holy horror, the remedy has been employed, millions upon millions of times, with the greatest benefit in various inflammatory affections, from Hippocrates down to the present hour. That it has been abused is unquestionable. We can hardly reconcile with our notions of propriety the loss of two, much less of three hundred, ounces of blood in the course of a few days for the cure of an idiopathic or trumatic inflammation; and yet cases of this kind of a well-authenticated character are easily found in the annals of medicine and surgery. Dr. Francis, of New York, distinguished alike as a skillful physician and an accomplished scholar, is a living monument to the efficacy of this heroic treatment. In a violent attack of croup he lost, in a few days, nearly three hundred ounces of blood. Physick, in an attack of yellow fever, in 1797, was bled to the amount of one hundred and seventy-six ounces; and the practice to which he himself submitted he did not hesitate to apply to his patients in all cases attended with inordinate vascular excitement. He rarely extracted a cataract without drawing blood from the arm at least once a day, or every other day, until all danger of undue inflammation was at an end. His success in this operation was proverbial.

No practitioner at the present day would dare to bleed to anything like such an extent; and yet there could doubtless

be found in every community men who would bear up well under it. But bleeding is no longer the fashion; the lancet is growing rusty in its case, and the cutler has almost ceased to manufacture it. Even the occupation of the leecher is almost gone. When I was a student in this city, it was very common in attacks of acute pleuritis to bleed a patient three or four times, and sometimes, if the suffering was very intense, perhaps even that often a day, the same orifice being repeatedly reopened for the purpose.

If we inquire into the causes of these revolutions in medical opinion, we shall find them, not in a change in the type of disease, or in an actual change in the powers of the system to withstand the effects of inflammation, but in a greatly enlarged knowledge of disease and of the virtues and application of remedies. The use of quinine and morphia is incomparably better understood now than it was thirty years ago; and as to aconite and veratrum viride, so highly esteemed at the present day in the treatment of inflammation, their antiphlogistic properties were entirely unknown until within a very recent period. Quinine has become the great remedy in all malarial maladies; opium is a powerful adjuvant in allaying pain and insuring rest both to part and system; and aconite and veratrum viride exercise so astonishing an influence in controlling arterial action as to render them special favorites with every enlightened practitioner. They have, in fact, become to be regarded as admirable substitutes for the lancet, tartar emetic, calomel, and active purgatives. Thus it is easy to perceive why blood-letting has fallen into desuetude; unmerited certainly in many cases, for, say and do what we please, there is no doubt that an early spoliative bleeding and the judicious use of the more heroic articles of the materia medica, formerly so much in vogue, will often do more in saving structure and function than any other of the popular remedies of the present day.

Practitioners are too prone to run into extremes, and to be led away by every specious theory wafted across the mind by men of genius, occupying high places, and speaking with the force of authority. Losing sight of common sense, and forgetting the teachings of experience, they are ever ready to grasp the shadow and forsake the substance. Hence the discordant views which so constantly agitate our profession, perplexing the public mind, and impairing our influence as enlightened and scientific physicians. Hence the strong hold which homœopathy, hydropathy, Thompsonianism, and other kindred delusions have taken upon the people. We constantly talk of the sins of our neighbors, but do not see the beam that is in our own eyes.

The past is pregnant with useful lessons. It teaches us, on

the one hand, the futility, the utter folly and vanity, of all exclusive systems of medicine; and, on the other, the importance of being governed, in our views of pathology and practice, by common sense and chastened experience tempered by judgment, which holds fast to whatever is good and useful in our art and discards whatever is hurtful. Its motto is enlightened, unprejudiced conservatism, ever ready to enlarge its boundaries by cautious observation and induction, and resolved to avoid exclusiveism in whatever guise it may present itself.

Standing upon this elevated and philosophical platform, rational medicine avails itself of whatever is useful in mitigating and curing disease; not disdaining, on the one hand, the employment of the lancet, tartar emetic, calomel, aconite, veratrum viride, and other depressants, when it has to deal with violent inflammatory excitement attended with a sthenic state of the system; or, on the other, a recourse to stimulants, as brandy, wine, quinine, opium, and nutritious food, when the system is worn out by disease, or when the morbid action is attended with exhaustion of the vital powers.

As the practitioner grows older and wiser, an enlightened skepticism commonly takes the place of his boasted infallibility; he distrusts many of the remedies in which he was wont implicitly to confide in early life; his calmer judgment readily detects the fallacious glare of the systems of the schools, and he adopts, with doubt and hesitation, the hasty generalizations of enthusiastic and misguided innovators. Formerly he had ten remedies for every disease; now he has hardly a single one for any. Couscious of the imperfections of his art, he administers medicine with a sparing hand, carefully eschewing everything that savors of poly-pharmacy and heroic measures; and cherishes a warmer respect for the resources of Nature, satisfied that, while he may often be her assistant, he can never be her master. The usurpations of youth have yielded to the dictates of sound philosophy; and although he may not be wholly free from the temptations of novelty, his mind is too strongly fortified by the lessons of experience to be easily led astray by any system, however facile or specious. The tyrant, fashion, has no longer any influence over him; he looks warily at every new doctrine, and calmly and dispassionately inquires into its merits before he permits himself to adopt it. He knows that an adherence to principles, based upon a professed study of pathology and therapeutics, constitutes the crowning glory of the physician.

The danger, then, in regard to this so-called new doctrine, is not to the old practitioner, grown wise and wary by experience, but to the young and incautious, fresh from the lecture-room, fond of novelty, and easily captivated by those "upstarts" in the profession, to whom the world is too apt, in its

thoughtlessness, to accord the title of genius, however little it may be deserved. Such men seldom have so well balanced a mind or so calm and philosophical a temper as to render them fit leaders in matters of science, especially in one of such a momentous nature as that of medicine. There is usually some great defect in their mental origanization, an absence of some important link, which sooner or later becomes apparent even to their most blind adherents, and which is sure ultimately to produce their downfall. They may, indeed, for a time, meteor-like, dazzle the horizon of the profession, but their reign is generally short-lived; and so it will be with Toddism, or the exfodiated stimulant treatment, so speciously paraded by its gifted author for our sanction and adoption.

The school of John Brown, which at one time counted its followers by hundreds, if not thousands, survived hardly a quarter of a century. Broussaissim had a still shorter career. Cookeism also perished in a few years. In a word, all extremeism, all exclusiveism, of whatever character, is necessarily destined to a brief existence.

Young Physic, warned by the sad experience of the past, should calmly ponder and cautiously try, before it decides to accept, in its full extent, so pernicious a doctrine. It has a duty, a most solemn and momentous duty, to perform; and its great mission to humanity will be a failure and a mockery, if it does not boldly set its face against all exclusive systems in medicine. "Soldiers!" said Napoleon, addressing his troops in Egypt, "Soldiers! from the summit of those Pyramids forty ages are looking down upon you!" "England," exclaimed Nelson, speaking to his brave mariners by signals on the eve of one of the most bloody naval engagements the world has ever witnessed, "England expects every man to do his duty." Young Physic! Hippocrates, the father of medicine, is looking down upon you through the long vista of nearly twenty-five centuries, and is beckoning to you to do your duty to your profession and to your fellow-beings.

Finally, let those who are so ready to put their trust in new systems of medicine, remember the lines of Ovid:—

> "*Nec lex est æquior ulla;*
> *Quam necis artificem arte perire sua.*"

Dr. David Dale Owen, who had earned an enviable reputation as a student of geology and the kindred sciences, died on the thirteenth of November. At the time of his decease, Dr. Owen was State Geologist of Indiana.

M. Despres, Surgeon to the Bicetre Hospital of Paris, died early in October, in the fiftieth year of his age.

Pharmaceutical Department.

By THOS. E. JENKINS, Pharmaceutist.

In looking over our Pharmaceutical Department for this year, we regret to find several articles without the proper credit. This has happened, doubtless, through inadvertence, and we hope the like will not again occur.

We take the following extracts from the Report of the Committee on Home Adulterations, to the late meeting of the American Pharmaceutical Association, and beg to call the attention of our readers to it in connection with the report on the same subject we published last year.

REPORT ON HOME ADULTERATIONS.

The matter of adulteration of articles of food is quite properly within the scope of a report on Home Adulterations; and your Committee propose entering somewhat largely into this part of the subject, trusting that the Association will grant them indulgence.

It is a sad and alarming fact that "death lurks in the pot;" that the community are exposed to injury, disease and death, by the very food they live upon, and the tea, coffee and water they drink.

It is often urged in defense of many of these nefarious practices, such as the addition of some of the salts of copper and lead, or cocculus indicus, to articles of daily consumption, that they are "used in *very small* quantities." We grant the statement to be true, and are deeply, we trust truly, grateful, as we ought to be, that we are not murdered outright, but scientifically and handsomely killed by inches.

Who can estimate the results of the continued introduction into the system, day by day, and month by month, of these poisonous additions to articles of food? No substance, however small its daily use, which is decidedly poisonous and pernicious, can be used without producing, finally, disease or even death.

Any physician can tell you of cases where the seeds of painful and lingering disease have been planted by some slow, insidious poison. All of you are doubtless aware that disease often arises from the use of water through lead pipes; and

who can say that of the many cases of "unknown disease," some of them may not have been caused by poison taken in the small but oft-repeated doses of the daily food.

We are aware that many, and among them even those of some scientific reputation, scout the idea of any trouble arising from water through lead, but your Committee feel that it is of such great importance that they can not pass it by without a brief notice. It is a question upon which scientific men have differed; but with the present knowledge of the subject that we have, your Committee can but recommend, in every practical case, the use of some other substance than lead for the conveyance of water to be used for drinking purposes.

Where so large a possibility of injury exists, prudence would dictate an entire avoidance of the danger.

One of your Committee has been fully convinced of the great danger attending the use of water through lead pipes. He has known lead to be taken from a portion of a liver of a person who died with every symptom of acute lead poisoning, and who was considered by the attending physician to be a victim of lead disease.

The susceptibility of individuals to this poison varies very greatly; many persons apparently suffer no inconvenience, although subjected to precisely the same exposure which proves fatal to others.

One of the most striking cases of extreme susceptibility to this species of poisoning which has come to the knowledge of your Committee is the following:

A man aged thirty-five, who was a house-servant in the city, at the time of his sickness, had never been exposed to the influence of lead, as far as could be ascertained, previous to entering his place of service.

He was employed by a private family, consisting of persons who were both older and younger than himself, and who had drank the water through a lead pipe for several years, in fact, ever since the introduction of the water into the city, without the slightest apparent injury. The man referred to, was from the country, and perfectly healthy and strong, upon his arrival in the city; he was a fleshy and robust man, and never had noticed any indications of paralysis.

He had been, in his situation as servant, exposed to lead poisoning in no other way than by drinking the same water that the family used, only three months, before he was attacked with violent symptoms of lead paralysis, without the premonitory symptoms of colic.

He was *completely* paralysed, excepting the muscles of respiration and the heart.

Even the muscles of the eyelids were useless, and the "blue

line" upon the gums was apparent, which is the well known and usual attendant upon cases of lead-poisoning.

Under treatment of iodide potassium he completely recovered.

If such serious results *can* occur, is not the matter one worthy the attention of those who have in charge the public health?

This instance, taken from many, is given to show that those who speak and feel warmly on this subject of lead-poisoning, do have some reason for their opinions and feelings.

We are aware that this is not strictly an adulteration, but certainly, after all that has been said and written upon this subject, those who, being aware of the facts in the case, and who could avert the danger, go on deliberately using lead pipes for drinking waters, place themselves in the situation of the man who sets spring guns, and gets shot himself. When lead pipes are used in preference because they are "cheaper" than gutta percha, block tin or iron, does not *this* constitute an adulteration of the water?

The next article we would ask your attention to is Milk:

During the past year it has been the duty of one of your Committee to analyse a large number of specimens of milk. As many of you are aware, there exists a statute in some States regarding the sale of adulterated and unwholesome milk, and by virtue of that statute an Inspector of Milk is appointed by the authorities.

During the past year a large number of specimens have been analysed at the request of the Inspector of Milk for the city of Boston. With but one single exception, every specimen was found to be adulterated, many of them very largely.

The plan adopted has been to compare the amount of food contained in any milk examined, with that which, by the analysis of a very large number of pure cows' milk, was found to be the *average* amount. The amount of food being ascertained in any given specimen, it is easy, by comparison, to find the relative worth of the sample to the standard, and thus ascertain the dilution with water.

The amount of milk sugar and salts was also estimated, and the difference between the weight of the Milk started with, and the sum of the weights of the food, milk-sugar and salts gave the weight of the water in any sample analysed. The amount of water which any milk contained, was not made the basis of comparison at all; the addition of water to milk decreases in a much larger degree the worth of the milk as a food yielding fluid, than it increases the *percentage* amount of water, and as the amonnt of *food* really constitutes the value of the milk, the analyses were based on this alone.

Water is the principle adulteration of milk; but to conceal this fraud and destroy the "skim milk" appearance, recourse must be had to several adulterations, as the addition of color-

ing matter, salt, etc., to increase the weight and improve the flavor, both of which it does, the latter quite remarkably.

Sometimes poor milk, from cows that should not be milked at all, owing to their condition, is mixed with that sent to market. It is only by microscopical examination that this unwholesome and unclean milk can be detected. Specimens of this kind have been met with during the past year.

From the experience one of your Committee has had, he does not hesitate to say that the adulteration of milk is largely and systematically carried on. Who can judge of the amount of sickness caused to children by the use of this unwholesome and oftentimes poisonous food—poisonous because decomposition has already commenced?

Much of the sickness among young children in many large cities may be fairly attributed to the bad and unhealthy milk which they almost of necessity receive; and to the poorer classes, those less able by other reasons to contend with such a diet, the greater portion of this milk is given.

The milk oftentimes is not served to consumers until the second day after it is taken from the cow, owing to its being transported long distances, and when diluted with water the process of decomposition is much more rapidly set up.

Of the large number of all the specimens examined the past year, there has not been a specimen, with but one single exception, that was not acid to test when received for analysis.

The object of all this adulteration is pecuniary gain, regardless of the consequences to the invalid or child who depends upon pure and wholesome milk to restore or prolong life. The practice must be a lucrative one; a single fact will go far to prove this, if proof is needed.

It has occurred that when parties have been selling milk which was adulterated, when warned by the Inspector that their milk was bad, and that some change must be made in the quality, they have received from their milk-men a handsome bonus in money, for the privilege of continuing to supply them with "*pure milk.*" We leave it for you all to judge whether this bonus is not recovered with large interests by the aid of the "cow with the iron tail."

The practice of adulterating liquor is very largely followed.

From the volume call "Treatise on Wine Making," under the head of "Secrets to Vinters," we make the following extracts, showing the dangerous practice recommended sometimes for improving wine:

"*To hinder Wine from Turning.*—Put a pound of melted lead, in pure water, into your cask, pretty warm, and stop it close."

"*To soften Grey Wine.*—Put in a little vinegar wherein litharge has been well steeped, and boil some honey to draw

out the wax, strain it through a cloth, and put a quart of it into a tierce of wine, and this will *mend* it."

In one instance on record, in Medical Transactions, vol. ii., page 80, Dr. Warren relates an instance in which thirty-two persons were made seriously ill by drinking wine adulterated with lead; of this number one person died, and another became paralytic. Your Committee give here an analysis of brandy, which was made the past year. The specimen examined was powerfully acid to test, and not a trace of tannin could be discovered in it. The alcoholic distillate was loaded with fusel oil. Artificial oil of bitter almonds was also present. Sulphuric acid was also present, probably in the state of soluble sulphate in the water used in the manufacture of the compound.

Analysis yielded in one-hundred parts—

Alcohol, sp. gr. ·793 - - - - - - -	57·00
Extractive and coloring matter, - - - -	1·60
Water, by loss, - - - - - - - -	41·40
Oil Almonds, Acetic Ether, Sulphuric Acid, not estimated, - - - - - - - - -	traces.
	100·00

This was judged to be an entirely factitious article. Your Committee know of other brandy, entirely factitious, sold the past year.

The practice of reducing the cost of wines and brandies by adding proof spirit and water is very common. Your Committee would suggest the propriety of the publication of some few, plain tests, by which pharmaceutists may be governed in their selection of wine and liquors; such as percentage amount of alcohol, freedom from lead and other metals, sulphuric acid and other sophistications which are practised.

A specimen of nitrate of silver, sold for a *pure* article by a New York house, contained but 30 per cent. of silver. If it had been the article represented it should have yielded 64 per cent. of silver.

A fraud similar to this was alluded to in our last year's report.

The next article your attention is asked to is chloroform. During the past year your Committee have met with chloroform made by a professed manufacturer of chemicals, and sold to a highly respectable drug house. This chloroform was found to contain more than twelve per cent. of alcohol, and its specific gravity was below 1·40.

The purchaser was not at all satisfied, and upon returning it he was told that it was bought for a pure article by the wholesale house, but from a source from which they did not usually purchase. It was invoiced "Pure Chloroform."

Upon further investigation the explanation was given, "that

no more alcohol was present than was necessary for its preservation, it having been found that a *certain amount of alcohol was necessary for the preservation of chloroform.*"

Very much remains to be done before the community realize to what an extent these frauds exist, and to what dangers they are exposed.

It is a matter of vital importance to every one. The fact that we may be unconsciously, but surely laying the seeds of disease is an alarming possibility. We can not place the matter in too strong a light, for the practice has a strong foundation, and it is a sad admission to make—*that of pecuniary gain, regardless of consequences.*

The habitual adulterator shields himself under the specious and cowardly excuse, "If I don't do it, somebody else will," and thus, with a *smothered*, but not *silenced* conscience, pockets his ill-gotten gains.

We would not have it inferred that there are not many manufacturers, or dealers in articles of food and medicine, who are not adulterators or dealers in sophisticated articles. We know of many upright and honorable men who scorn the practices we have alluded to, both on account of their injurious tendency and because they are dishonest; but your Committee are aware that there have been men who have yielded to the pressure, and have in a greater or less degree embraced the practices they inwardly condemn, *because they had a livelihood to get*, and could not contend with less scrupulous competitors for the length of time required to establish a reputation.

It is a sad thing to hear the remark sometimes made, "O, Mr. ——— is an *honest* man, in fact *too* honest to get a living in such and such a business."

Your Committee have heard this remark made, and have felt that there was more truth than fiction in it, in instances within their knowledge. The trials and difficulties in the way of a *perfectly upright and honest* discharge of business duties are known to every member of our profession, and we trust that all in good time these trials and difficulties may be appreciated by the community at large, so that *no* man, in any profession or business, may be allowed to meet with disappointment or defeat becauese he is an honest man, and discharges, according to his conscientious convictions, the duties of his situation.

ON THE DEPRECIATION OF SMYRNA OPIUM IN MEDICINAL VALUE.

BY P. WENDOVER BEDFORD, OF NEW YORK.

"Has the average morphia strength of commercial Opium from Smyrna depreciated from its earlier value? and if so, to what extent?"

In answer to the above question the writer would briefly say, that since the last meeting he has made a number of examina-

tions of opium in reference to the inquiry, and believes that opium, as now found in our market, does not yield the percentage of morphia it formerly did.

The opium selected for examination was the best powdered opium from our leading drug warehouses, with one exception, which was made directly from the opium in lump.

The reason of selecting the powder is, that it is a fair average of a quantity, while each lump would give a different result. In drying and powdering opium it looses from 17 to 21 or 22 per cent. The first sample I dried and powdered lost but 12 per cent., but the pieces were selected because they were hard and dry. No analysis was made of this specimen.

The first sample experimented with weighed one pound, and in drying and powdering lost 21·13 per cent. On further drying a portion at 312° it lost 4 per cent. more. This was a fine specimen of Smyrna opium. The experience of Dr. E. R. Squibb (as recorded in the American Journal of Pharmacy, vol. xxxii, p. 117,) in drying and powdering opium is, that it will vary from 18 to 11 per cent.

A friend in the wholesale trade has furnished me a statement in which the loss on four parcels of about 30 lbs. each was as follows:

No. 1, loss 22·12 per cent.
No. 2, " 17. "
No. 3, " 19. "
No. 4, " 21·5 "

The average being 19·9 per cent.

the fair average would probably be 20 per cent. and on this my calculations are based, with the exception of the first specimen, which is calculated from its actual loss, 21·13 per cent.

	Percentage of Morphia	
	In powdered Opium.	In Commerical Opium.
No. 1. Opium dried and powdered,	11·2	9.24
No. 2. Sample of powdered Opium,	10·9	9·08
No. 3. " " "	9·09	8.55
No. 4. " " "	7·06	6.33

The experiments of Dr. Squibb, (Am. Jour. Pharm., vol. xxxii. p. 117,) show much greater difference in result, the lowest percentage being 5·15 per cent., and the highest 11.15 per cent.

Dr. Staples, in his article on Opium and some of its Constituents, (Am. Jour. Pharm., vol. i. p. 16,) obtained as high as 13·8 per cent. of morphia slightly colored.

The U. S. Pharmacopœia says nothing about the percentage yield of its process, but on page 564 of the U. S. Dispensatory, 11th edition is found: "Good opium should yield ten or twelve per cent. of the impure morphia precipitated from the

infusion by ammonia with alcohol, according to the process of the U. S. Pharmacopœia," and on page 1147, same work, "the proportion of morphia which Turkey opium is capable of affording varies from nine to fourteen per cent."

Of the various processes recommended, none is as simple and reliable as that of the U. S. Pharmacopœia, which is the process of Dr. Staples, somewhat changed. In manufacturing on the large scale this is modified so to avoid the use of alcohol.

"Has opium depreciated in its morphia strength?"

The writer thinks it has. This depreciation is partly due, no doubt, to the primitive mode of cultivating the soil. I am not aware whether they understand the theory of a succession of crops, or whether opium exhausts the soil to any extent; but may not this be the cause?

Another cause is probably carelessness in its preparation for market; and worse than all, intentional addition of inert matter.

In conversation with a pharmaceutist, some time since, he told me that in preparing laudanum he always chose nice pieces of soft opium in preference to dry, as it contained more morphia.

I had intended investigating that statement, but the short period prevented my doing so.

"To what extent has opium depreciated in its morphia strength."

To this question the writer is unable to give a direct answer. He would allude to the varying results of the experiments named, as well as to the analysis of Dr. Squibb, as showing a wide range in the percentage from samples of the same commercial quality of Smyrna opium.

A manufacturer of this city informs me that 10 per cent. of the sulphate of morphine is a good result, and above the average of last year's crop, which was not over 9·5 per cent., equivalent to 7·59 per cent. of the alkaloid.

Were the quantity of yield definitely laid down, it would be quite easy to say what the present depreciation is; but as that is not named, it would be impossible to give any definite answer.

When opium is itself so variable in its strength (for it depends mostly on the morphia alone), it follows as a necessity that all its preparations must be somewhat uncertain in their action; and while many pharmaceutists will continue to make Tincture Opii from crude opium, there will be but little uniformity in its strength.

The true method of administering opium to obtain definite results, would seem to be either to use the salts of morphia, or better, by a preparation of opium, to be of definite morphia

strength, like the Liquor Opii Compositus of Dr. Squibb (see Am. Jour. Pharm. vol. xxxii. p. 120), which preparation, or a modification of which, it is to be hoped will find a place in the forthcoming Pharmacopœia.

New York, September, 1860.

The selections we give in this number are a few, deemed most interesting to the general practitioner, taken from the long list reported to the American Pharmaceutical Association by the Committee on the Progress of Pharmacy, at the Ninth Annual Meeting, held in September, 1860.

MATERIA MEDICA.

The Oil of Horse Chestnut is lately imported from France as a specific remedy in neuralgia; it has also been made in this country by the use of ether.

Therapeutic properties of Sarsaparilla.—The Edinburg Medical Journal publishes observations by Prof. Bocker to Dr. A. M. M. Adams, and by him communicated, to the effect, that he finds sarsaparilla destitute of both diuretic and diaphoretic properties.

The leaves of the Castor Oil Plant.—At a meeting of the Medical Society of London, Dr. Routh exhibited preparations of this plant, which he had used with remarkable effect as a lactagogue remedy. The external use of decoctions and cataplasms made from plants of this family, was long since known to the Spaniards in Peru and Chili, and to the inhabitants of Boa Vista, in the Cape de Verd Islands, as useful in promoting the flow of milk. The leaves used in the cases treated by Dr. Routh were brought from Australia.

Saccharated Lime.—Dr. John Cleland, who recommends lime to be dissolved in water by the aid of sugar, so as to contain 18 grains of lime to the ounce, asserts that it is a valuable antacid and tonic to the alimentary system in dyspepsia, without being in the slightest degree astringent.

Iodide of Ammonium in Syphilis.—M. Gamberini, of Bologna, publishes conclusions favorable to this treatment.

Penghawar Jambi.—Dr. Vinke, of St. Petersburg, Russia, found that while Penghawar jambi coagulates blood in 2 min. 18 sec., the same blood is coagulated by the same weight of bovista (Lycoperdon bovista) in 7 minutes, by sponge in 8½ min., by spunk (Boletus fomentarius) in 10 min. 52 sec. The Penghawar jambi acts by absorbing the water, with the dissolved salts and albumen. This action is not lessened by the previous treatment with hot water, alcohol, ether, caustic potassa, and diluted acids, unless the cellular structure has

been destroyed. Dr. V. quotes 15 cases in which he has used it with the greatest success. It has no effect on internal hæmorrhages.

Selinum palustre, Lin., *Peucedanum palustre*,, Mænch.—Dr. Th. Herpin directs attention to the root of this plant, which is a good remedy in epilepsy. 30 grammes of the powdered root are given the first week; the dose is increased 15 grammes weekly until it reaches 125 grammes. It was formerly officinal under the name of Radix Olsnitii, s. Thysselini.

Perchloride of Iron.—A desperate case of hæmorrhage from the nose is reported by Dr. Fountain Davenport, of Iowa, in which life was saved at the last extremity by an injection of strong solution of this salt. A case of obstinate hæmorrhage from the tonsils after incision, occurring in one of the English hospitals, was also arrested by its use. The *Lancet* contains a caution in regard to its use, founded on its occasioning inflammation. Does not this result from want of care in its preparation?

Arnica.—M. Henry, Esq., surgeon of Middlesex Hospital, writes in the *Lancet* in favor of the great utility of arnica as an application to bruises and wounds. He uses the tincture largely diluted with water, 2 drachms to an ounce being the strongest application, and gives the tincture internally in dose of 5 minims every 4 to 6 hours. This serves as an offset to the frequent assertion of some practitioners that it is quite inert and useless.

Chromic Acid in Granular Opthalmia.—Dr. F. Hairion cauterizes with chromic acid dissolved in an equal part of water.

PHARMACY.

Deliquesced Perchloride of Iron.—J. Zachariah Smith, in the Medical Gazette, recommends the thick brown supersaturated fluid resulting from the deliquescence of the solid perchloride as the very best application of the salt to a bleeding surface.

Glycerole of Aloes.—Recommended as an external application in the treatment of lichen agrius and excoriation from eczema.

Socotrine Aloes, ʒiv.
Pure Glycerine, ʒiv.

Powder the aloes and mix in a mortar with the glycerine, transfer to a bottle and agitate well together; if the aloes is not entirely dissolved, digest for fifteen minutes in a water bath and strain.

Lead in Citric Acid.—J. Laneau has detected in some English citric acid, a minute quantity of lead, about 0.0207 per ct.

Homœopathic Medicine.—Analysis of 2400 globules for arsenic. Not a particle showed itself by Reinsch's test.

Antimoniuretted Hydrogen.—Dr. Hannon, Professor at the University of Brussels, has published a note on the preparation and use in medicine of this gas, which is without odor or irritating properties, and can be introduced into the lungs without danger.

Purification of Castor Oil.—M. Perversi, of Turin, recommends treating rancid castor oil as follows: To 1000 parts add 25 of animal charcoal and 10 of calcined magnesia, digest at a temperature of 68° to 78° F., often shaking up for 3 days.

Antidote to the smell of Musk.—In the "Curiosities of Science," by John Timbs, it is stated that emulsion of bitter almonds possesses the power of neutralizing the smell of musk, and that according to Mr. Mertot, a druggist in Normandy, ergot of rye will produce the same effect.

Syrup of Iodohydrargyrate of Iodide of Iron.—M. Chamoun suggests the union of iodide of iron and biniodide of mercury in the forms of syrup and pill, thus:

Take of Biniodide of Mercury, 1 grain,
Syrup of Iodide of Iron, 3000 grains.

Triturate the biniodide with the syrup until dissolved, and incorporate with the remainder. There appears to be a combination between the two iodides.

Decoloration of Syrup of Sesqui-Chloride of Iron.—M. Duroy, in the Journal de Pharm., for May, states that a syrup made by mixing 10 parts of solution of sesqui-chloride of iron of 30° B., with 490 of simple syrup, gradually becomes decolorized, the iron salt is reduced to a protochloride, and grape sugar is formed.

Improving the taste of Copaiva.—The addition of a little carbonate of magnesia or lime, according to Landerer, deprives old and resinified copaiva of much of its acid taste, and on taking afterwards a cup of well sweetened coffee, scarcely any taste is left behind.

Emulsion of Coal Tar.—This preparation designed as a disinfectant is prepared by agitating saturated tincture of quillaya, 2400 parts, with 1000 parts of coal tar, decanting, filtering and mixing with 4 parts of water to one of the tincture; this is a convenient emulsion for injecting into ulcers, &c.

Glycerine in the Arts.—As a solvent for gum and albumen, glycerine is found very useful, the solution being permanent in summer.

Red Precipitate Ointment.—F. A. Keffer communicates the following formula which he states produces an ointment far from the tendency to rancidity so observable in the officinal.

℞ Olei Ricini, ℥iiiss.
Ceræ Albæ, ℥ss.
Hydr. Oxid. Rub. ℥ss.

Melt the wax and oil with a gentle heat, and when cool rub in the red precipitate previously reduced to fine powder.

Extract of Rhatany, if rubbed into a very fine powder, then triturated with very little water and finally with 20 or 25 drops of alcohol, is readily dissolved in aqueous mixtures.

Iodine in Ointments.—Iodine may be dissolved in a little chloroform and triturated with the lard; the excess of chloroform readily evaporates, and the ointment contains the iodine uniformly mixed.

Chloride of Gold, and Auro-chloride of Sodium, when prescribed in ointments with acetate of morphia, ought first to be rubbed up with a few drops of oil of almonds, to avoid decomposition between the two salts.

Tannate of Bismuth.—M. Cap has introduced this remedy in the treatment of obstinate diarrhœa.

INORGANIC CHEMISTRY.

Perchloride of Iron as a Disinfectant.—Drs. Hoffmann and Frankland, to whom the subject of the deodorization of sewage was referred by the Board of Works in London, gave a decided preference to perchloride of iron in solution.

Tungsten.—This hitherto unprofitable metal which has been thrown into heaps as worthless, at the tin mines in Bohemia, for nearly 500 years, has recently been combined with iron to form a very cheap and superior steel, used in cutlery, &c.

The Solubility of Phosphate of Iron.—J. M. Maisch calls attention to the fact that the ordinary phosphate of iron may be dissolved by the acid of citrate of ammonia forming a permanent solution as was known to be the case with the pyrophosphate.

Spontaneous Decomposition of Chloride of Lime.—Dr. Hofman has published an interesting statement in regard to a large bottle of this substance which, after remaining in his laboratory for about seven years, exploded with great violence.

Reduction of Peroxide of Iron.—F. A. Fliickiger found that a solution of persalt of iron is not deoxidized either in the cold or short boiling, with acetic, oxalic, benzoic, citric, tartaric, arsenious acid, urea, caffeina, quinia, cinchonia, atropia, digitalin, veratria, codeia, strychnia, salicin, santonin, oil of bitter almonds, chloroform, arrowroot, wheat-starch paste, gum, milk-sugar, cotton, tincture of litmus. The deoxidation is effected on boiling, not in cold, by phloridzin, grape-sugar, pepsin. It is produced instantly in the cold by gallic acid, the tannin from oak, kino, catechu, rhatany; by catechin ether, iodide of potassium, molasses from cane sugar solution of indigo, morphia and its salts, opium and its tinctures, and tincture of guaiacum.

Reaction between oxide of copper and protein compounds.—Dr. A. Vogel and C. Reisehauer observed that protein compounds and glutinous substances immersed in a solution of a fixed alkali or baryta, are dissolved on the addition of a copper salt. The solution has a blue, violet, or carmin-red color, as the protein increases, but reassumes the blue color on the absorption of carbonic acid; ammonia produces only the well-known blue color, with a tint of violet.

Carbonate of Lead from Coffins.—R. V. Tuson has submitted portions of a very old leaden coffin to analysis, and finds them to consist of carbonate of lead.

ORGANIC CHEMISTRY.

Sugar in Sulphate of Quinine.—J. B. Batka asserts that all commercial sulphate of quinine contains sugar resulting from the action of sulphuric acid upon the cellulose.

Carbolic Acid as a Disinfectant.—A dilute solution of carbolic acid (or creasote,) is found by M. Calvert, of Manchester, to preserve a corpse injected with it, for several weeks; a small quantity added to urine, will preserve it from decomposition for weeks, and it will prevent the gallic fermentation from taking place in the solution of tanning substances.

Bread making.—A new process for the manufacture of bread, by forcing carbonic acid into the water to be used in forming the dough, was introduced into the chemical section of the British Association at Aberdeen; it is said to be used successfully in London. The use of yeast is superseded.

Cyanide of Potassium in Segar-smoke.—M. Marchand of St. Germain, states that cyanide of potassium is formed during the combustion of cigars made from belladonna and other solaneæ, by the decomposition of alkaloids and nitrate of potassa present.

Vegetable Parchment.—Prof. A. W. Hoffman publishes in Ann. der Ch. und Ph. cxii. 243, a report to De la Rue & Co., of London. The honor of the scientific discovery of this transformation belongs to Messrs. J. A. Poumarede and L'Figuier, of Paris, but the perfection of the process is the work of W. E. Gaine, of England.

Odor of Horseradish.—Prof. Hlasiwetz has closely imitated this by combining an alcoholic solution of iodoform with sulpho cyanide of potassium.

Amyloid Substances, constituents of animal bodies.—The presence of starch in the animal economy, is described by Dr. Charles Rouget, as being necessary to their existence, and he attributes the existence of sugar in the natural waste of the amylaceous element.

Detection of Picric Acid in Beer.—M. Lassaigne's test is said to detect one eighteen-thousandth of this adulteration.

Cubilose.—This name is applied to a new principle found by M. Payen in the Chinese edible bird's nest; it is a peculiar secretion of the swallow, analogous to animal mucus, containing nitrogen and sulphur.

New test for Vegetable Alkaloids.—M. Schulze, of Rostock, proposes the acid mixture obtained by dropping pentachloride of antimony into solution of phosphoric acid as a test for most of the alkaloids with which it yields characteristic precipitates.

Detection of Fusel Oil in Alcohol.—Chloride of calcium is put into a beaker and just enough of the alcohol is poured over it to moisten the whole; the beaker is then covered up, and allowed to stand. In a short time if any fusel oil is present the odor will be quite perceptible.

TOXICOLOGY.—SALE OF POISONS, ETC.

Accidental Deaths from Poisons.—Cases are recorded in the English journals especially, of taking arsenic, sulphuric acid, Burnett's disinfecting fluid, essential oil of bitter almonds, (ignorantly dispensed for the fixed oil,) of prussic acid, (taken to allay pain,) of Godfrey's cordial—of a mixture of 1 ounce of chloride of zinc and 4 ounces of hydrochloric acid—of strychnia in one case given by mistake for santonin, by a practitioner who had obtaind it, labelled Santonin, from a wholesale druggist. In November last a case occurred in Philadelphia, in which sulphate of morphia was dispensed for sulphate of quinine, the prescription was transferred during its preparation, from the assistant who weighed out the ingredients, to another who finished it without inquiring its composition. This melancholy affair led to the following presentment of the Grand Jury: "The Grand Jury of the Quarter Sessions presented the carelessness in putting up physicians' prescriptions. The presentment says: 'The practice of verbally directing the compounding of prescriptions, without written directions, should be wholly discontinued; and no one should in any case perform that delicate and important business without having the written prescription before him, and being at all times fully able to comprehend it, and know the medicines to be compounded. Neither should an apothecary suffer his attention to be divided between two or more prescriptions at one and the same time.'"

Suicides.—By cyanide of potassium—the mineral acids—laudanum—sulphuric acid—solution of nitrate of silver—hydrocyanic acid. The Lancet records the second case of suicide by nicotine, in London. The individual fell dead with the vial still in his hand. A case is recorded in which the lives of a photographer and his female companion were destroyed by cyanide of potassium.

Deaths from Chloroform.—At St. Thomas' Hospital, London, Richard White, aged 26, died suddenly while under the influence of chloroform, administered by inhalation, for the purpose of having a limb amputated. Dr. Renwick, a medical gentleman in Alloa, expired while under the influence of chloroform, administered to him during a surgical operation. His pulse being full and regular, no alarm was felt till after the operation, when all attempts to restore him to consciousness were unavailing, his pulse became imperceptible, his breathing less frequent, and death ensued. A Mrs. Mansell died in England from the injudicious use of chloroform by inhalation, she being addicted to its habitual use. The jury censured the druggist. At St. Joseph's Hospital, Lisbon, a man died recently in six minutes, from the effects of chlorofrom administered previous to the operation for a tumor on the face.

Suicide by Acetate of Morphia prevented.—The Lancet gives a remarkable case of recovery after taking 15 grains of acetate of morphia. The patient was a young pharmacien of Bordeaux. The poison was taken for the purpose of suicide; it was enclosed in a wafer and taken soon after dinner. Two hours elapsed before the emetic was administered. The coma was complete; by bleeding from the arm, consciousness was restored, but only for a few moments, and the fact of the poisoning disclosed; subsequently vomiting was induced, strong coffee and solution of tannin were freely administered, and the patient recovered. Dr. Salvist, who attended the case, attributes the recovery to the poison being taken in a wafer and after a meal; as digestion is suspended during coma, the greater part was probably not absorbed and was ejected during emesis.

Poisoning by Acetate of Lead.—A laboring man, named James Turner, is reported, in the London Times, as having been convicted of the murder of his wife by administering sugar of lead dissolved in beer.

Death from carelessness.—A manufacturer of "Vermin Destroyer," in Strafford, England, shook some of the mixture of arsenic and carbonate of baryta over a bridge into a mill stream; some lodged upon a projection of the bridge; two boys eat of it and soon died.

Painted Toys.—Cases are recorded in the English journals of the poisoning of children from sucking the heads of dolls and other toys, in painting which red lead, white lead or other cheap pigments have been used.

Poisoning by Tincture of Aconite Root.—A case which recovered under the use of decoction of coffee, reported by Dr. Heighway in Cincinnati Lancet.

Arsenic in Gray-powder.—The presence of arsenic or antimony in the commercial mercury with chalk, sold in England,

as alleged in the Smethurst trial, has been proven to be untrue, by the experiments of Prof. Redwood, detailed in the London Pharm. Journal, March, 1860.

Lead in Snuff.—The case of lead poisoning from the use of snuff contaminated with carbonate of lead, from the lead foil in which it is packed, are noticed in German journals. In some cases $2\frac{1}{2}$ per cent. of lead has been detected.

Arsenic in Paper-Hangings.—The Manchester Guardian gives three cases of poisoning from this cause, which terminated in convalescence, though not without serious and protracted illness. The patients were children, placed in a room recently papered with green paper, in which a fire was kept. A correspondent of the Chemical News calls attention to the complete protection furnished by a suitable sizing over the surface of the paper, which is too often omitted.

Orpiment in Buns.—A case of wholesale poisoning is recorded in the English journals, arising from a druggist selling to a baker in Clifton, some orpiment, (yellow sulphuret of arsenic,) to impart a yellow tinge of color to bath buns, in imitation of the shade they acquire when eggs are used in their preparation. No deaths occurred, though several cases of extreme illness resulted.

Adulterations.—A chemist in Quebec has recently published the results of analysis of certain articles purchased in New York. Pickles labelled, "No sulphate of Copper," contained sulphate of iron instead. Sherry wine contained an immense quantity of salt; green tea contained copperas; gin was whisky and essence of juniper. In snuff he found peroxide of iron and other chemicals to the extent of one-fifth of its bulk.

Caffein as an Antidote to the poisonous effects of Opium.—Prof. H. F. Campbell, of Georgia, reports, in the Southern Medical and Surgical Journal, a case which seemed hopeless, but was treated by an injection of solution of caffeina in coffee, with entire success.

The enduring odor of musk is astonishing. When Justinian, in the year A. D. 538, rebuilt what is now the mosque of St. Sophia, the mortar was perfumed with musk, and to this day, after the lapse of thirteen centuries, the atmosphere of the temple is filled with the odor.

Carbon from the Lungs.—It has been ascertained by a Swedish Chemist, experimenting on a healthy man aged 35 years, confined in a small chamber into which air entered by a

hole on one side, and examined after it passed through another hole at the opposite side, that the solid carbon ejected per hour was—

While fasting, - - - - -	105 grains.
After breakfast, - - - -	190 "
When hungry, - - - - -	130 "
Two hours after dinner, - -	165 "
After tea, - - - - - -	160 "
While sleeping, - - - - -	100 "

Making about 3400 grs., or 7 ozs. (Troy) daily.

As a curious, significant, and instructive fact to the physiologist, of the chemical inquiries of the present age, it has also been ascertained that the quantity of solid carbon exhaled in twenty-four hours is 63 ozs. in the case of a cow, and about 70 ozs. in the case of a horse.

ON THE SITUATION OF FISTULA IN ANO, AND THE USUAL COURSE OF THE ULCER.

BY F. RIBES, M.D., ETC., ETC.

(Published in 1826 in the 9th volume of the "Memoires de la Societe Medicale d'Em ulation."—p. 85.

[CONCLUDED.]

PROGNOSIS.—1st. *Congestive Abscess*, presenting itself near the anus, is a serious and generally a fatal malady.

Symptomatic Abscess, resulting from the presence of a foreign body, is readily cured, and is without danger, unless implicating important organs, the peril arising from that cause alone.

3d. *Critical Abscesses* may be regarded as always salutary.

4th. *Idiopathic Abscess* is dangerous in proportion to the importance of the parts injured, and rarely produces fistula in ano, unless of the kind denominated blind external fistula.

Formerly, stercoral abscess was regarded as a serious disease, being the result of ulceration of the rectum, and the constant cause of fistula in ano; but now the operation for fistula is almost as simple as the opening of an abscess, and these collections are, therefore, the subject of but little concern.

TREATMENT OF ABSCESS OF THE FUNDAMENT.

Abscess of the anus being preceded or accompanied by fever, general heat, dryness of the mouth, and local heat and uneasiness, requires a treatment adapted to these conditions, with the single exception of the abscess of congestion, which

should be almost entirely abandoned to nature. If it is suspected that an abscess of the rectum is produced by the presence of a foreign body, the finger should be passed into the anus, and the cause of the trouble sought for and removed. If this can not be accomplished, or the disease depends upon some other cause, it should be treated, firstly, by a rigorous diet, injections, baths, and one or more bleedings, according to the exigencies of the case. If the tongue indicates a foul and disordered stomach, emetics should be administered, and abundance of refreshing drinks be ordered. Poultices applied to the tumor, and frequently renewed, will relieve pain and hasten suppuration. When this has taken place the abscess should be opened without delay, to prevent the destruction of too great a quantity of cellular tissue and the denudation of the rectum.

Now, how should this opening be made? Should we, in accordance with the precepts of Faget, open the abscess and slit the rectum open from the highest point of denudation, in order, as he says, to render the dressing of the wound more easy, allow the discharges to escape more readily, facilitate the union of the parts, and thus prevent a fistula, and render a second operation unnecessary? or rather, as Foubert has advised, would it not be better simply to open the abscess, let out the matter, and permit the parts to relieve themselves by suppuration? If, at the end of some time, the wound remains fistulous, the patient may be cured by a second operation, neither difficult, tedious, nor painful.

Faget's operation should be abandoned on account of the pain it causes, and the danger of serious hemorrhage, and also, because it frequently fails; for if we lay open the rectum through the whole extent of the denudation, and yet do not include in the cut the opening which communicates with the bowel, the fistula will remain unhealed.

Manner of Operating.—After preparing the necessary apparatus, pass a T bandage around the body of the patient, place him upon the edge of the bed, lying upon the affected side, flex the thighs upon the pelvis and the legs upon the thighs, more upon the sound side than upon the other, so as to expose, as much as possible, the seat of the disease. The patient being thus placed, and fixed in this position by the assistants, the

operation is proceeded with according to the nature of the abscess.

If we have to operate upon a congestive abscess, from the fact that it becomes very extensive and painful to the patient, it is proper to make the incision in the centre of the tumor, with the point of a very narrow bistoury, and, after making the puncture, to withdraw the instrument without enlarging the incision, for the pus, being generally very fluid, flows out freely, and the smallness of the opening does not allow the air to obtain access to the interior of the wound. If this operation fails to cure the disease, it will not, at least, hasten the death of the patient.

If the abscess be critical, or idiopathic, we should make an incision in the center of the tumor, following the direction of the inner parts of the nates, so as to allow the pus to escape freely, and after the engorgement of the parts has somewhat subsided, a piece of lint should be placed between the lips of the wound, and over that some pledgets, supported by a light compress and the T bandage. This dressing should be renewed twice a day. I have seen many abscesses thus treated, cured in a month or six weeks, although the rectum was denuded for a considerable extent.

Should the abscess, when opened, prove to be stercoral, we proceed nearly in the same manner; but if, when we have made the incision, we discover a communication with the rectum, we need not hesitate to make a complete section. It is very rare, however, that we are so fortunate as to find this opening, and our search is not only generally fruitless but extremely painful, so that it is best to content ourselves with dressing the wound, and await the abatement of the inflammation before attempting to find the opening into the rectum.

My explanations of the structure of the inferior orifice of the intestinal canal, and of the nature of wounds and ulcers of the rectum, and my remarks upon foreign bodies in this intestine, and upon abscess of the fundament, prove that the internal opening of fistula in ano will always be found in the lower portion of the rectum, or in the neighborhood of the internal sphincter, and the hemorrhoidal plexus. This fact appears so evident that nothing but experience can disprove it, while, happily, all observation adds to its certainty; for after

a careful study of the parts in the large number of subjects, (dying of other diseases), which I have examined during twenty-six or twenty-seven years, I have found more than eighty having fistula in ano; and in every case the opening was at the point I have named, and it is there that every one will find it, who makes his observations unbiased by prejudice.

I have endeavored, first, to assure myself of the location of the internal opening, and then to learn what was the most frequent direction of these fistulas, and through what parts they take their course.

In the greater number of bodies, I have found only one internal orifice; but I have met with some consumptive subjects in whom there were two, and one only in whom there were three openings. This internal opening I have most frequently found just above the point where the mucous membrane unites with the skin, and occasionally a little higher; but never more than five or six lines; at least in the eighty bodies with fistula which I examined, this opening was no higher in any one of them, and in a considerable number the distance did not exceed three or four lines. The edges of this opening were ragged and soft in most cases, but hard and elevated in a few, especially in consumptives.

The direction of the fistulous track varies somewhat. In many cases I have seen the fistula, after leaving the interior of the rectum, pass down between the mucous membrane and the internal sphincter. At the lower border of the latter it turned, and, passing between the external sphincter and the skin, it opened outward near the anus.

In many other cases the fistula passed through the fibres of the internal sphincter, descended between this muscle and the longitudinal fleshy fibres of the rectum, and running along the superior face of the external sphincter, it traversed the fibres of this muscle, and ulcerated the skin at a point more or less remote from the opening of the rectum.

In a large number of the subjects, however, the parts through which the fistula passed were so disorganized that it was impossible positively to determine the original course of the ulceration. In all these subjects the fistulous canal was lined by an adventitious membrane, thin, smooth, and uniform, and apparently without any villosities. My researches, then,

have convinced me that in nearly every case the fistula commences in a hemorrhoid, or in a varicose hemorrhoidal vessel.

From these data I do not hesitate to state that it is possible in most cases to see the internal opening of a fistula. In order to do so it may be requisite to request the patient to bear down forcibly, as at stool, at the same time that we separate, with the fingers, the sides of the anus. We shall then see, in almost every case, in a fold of the mucous membrane, the little ulcer which indicates the inner orifice of the fistula. If it can not be found in this manner, it will be necessary to resort to the probe to ascertain its position, a means which will not ordinarily fail if the instrument is properly used. Unfortunately, in consequence of the prevailing idea that the internal opening is very high up, the point of the probe is carried too high, especially when the rectum is believed to be denuded for some distance. Besides, as the cellular tissue of the parts is very lax, the probe penetrates it easily, and thus readily passes upward when pushed in that direction, under the idea that the opening is at an elevated point, in which case it will not be found, except by accident.

I will now state the means by which I have been able most easily to trace the fistulous track, and follow it successfully into the rectum. I have said that fistulas have their internal orifice four or five lines, at most, above the anus, and most frequently not so far. More or less of their course lies between the external sphincter and the skin; consequently, if the probe is directed too high, it will certainly not pass into the rectum. It should, on the contrary, be carried horizontally and nearly parallel with the perineum, at least in females, and in males, inclined a little upward, for reasons which have been already indicated. When the end of the probe has entered the fistula, it should be passed carefully and smoothly along upon the internal surface of the skin, then directed along the side of the lower part of the rectum; in this way the internal opening is certain to be soon encountered, together with the finger which had been previously passed into the anus. If, then, the patient is properly placed, and we desire to operate by incision, we bring out at the anus the point of a grooved director, introduced into the fistula and somewhat bent; we then slide along its groove the point of a bistoury, with the edge towards the anus, and

divide all the integuments from one end of the fistula to the other.

I again assert that the internal opening will always be found very near the anus, and, unless the director can be passed through it into the rectum, an operation should not be performed. There is no need of uneasiness with regard to the denudation of the intestine, so long as both openings are included in the incision. In blind external fistula the denudation is never so great, nor the cellular tissue so completely destroyed as to cause us to despair of the reunion of the intestine with the neighboring parts, and we should never, in this case, lay it open. However numerous the external openings may be, they have no effect upon the internal orifice of the fistula.

Treatment.—According to the opinion of Sabatier, and in accordance also with experience, old fistulas, with many openings, callosities and sinuosities, where it would be necessary to excise a large amount of tissue, in order to destroy them (and particularly when the internal opening is above the reach of the finger), are susceptible of no treatment except proper care and attention. Phthisis offers, in regard to the cure of fistula in ano, a special exception.

The treatment of uncomplicated fistula is very simple, and in general the disease is readily cured. A proof of this is that the malady is often healed spontaneously, without medical aid, and without an operation. In fact, many people have fistula without being aware of it; they believe themselves to have had piles, which, after opening from time to time, finally healed without treatment.

During the last year I attended a person with fistula. A probe passed easily from the external opening into the rectum, thus demonstrating the existence of the disease. The patient had felt a slight pain, which he supposed to be caused by some small substance which had passed accidentally into the fistula, and came to me to have it examined. He did not wish to be operated upon, and assured me that it would get well of itself; that some times, for several years, he felt nothing of it, but that, following a hemorrhoidal flux, the disease reappeared, and again healed. He said that at Bordeaux, when twenty-five years of age, "they had *spitted* his fistula;" that was his

expression. The pain which he experienced was so severe that he would not allow the operation to be completed. Two months afterwards it was completely well. He had made many voyages by sea, and it was not until six years after this, following a hemorrhoidal flux, that it reappeared. It remained open a few months, and again closed, and for eight or ten years he had no return. It was now the fourth or fifth time that the fistula had reopened. I examined him again, not long after, and found no hardness or callosity; he felt no pain, and the external opening was perfectly cicatrised.

In 1807, some days prior to my departure for the campaign of Prussia and Poland, a lady consulted me in reference to an ulcer, situated at a little distance from the anus. I introduced a probe and passed it easily from the external orifice into the rectum. Notwithstanding all I could say to this lady, to convince her of the simplicity of the operation, I could not persuade her to have it performed at the time. She asked for eight days to arrange her affairs, assuring me that she would then submit with the most perfect resignation. In the meantime I received orders to depart for the army within twenty-four hours. The lady was distressed at this; but a fortnight after my departure her pain became less severe, the suppuration gradually decreased, and at my return, ten months after, I found the ulcer perfectly healed without an operation. Since then there have been no signs of a recurrence of the disease.

In examining bodies with hemorrhoids, I have observed, upon many of them, cicatrices near the margin of the anus, and in the lower part of the rectum, and have also found that the cellular tissue and all the parts between the external and internal cicatrices were thickened and tendinous. I have no doubt that these cicatrices were the results of a spontaneous cure of fistula in ano.

In view of these facts, while injections and compression may fail, in many cases, to effect a cure, I am satisfied that they will sometimes succeed.

Cauterization, because of its antiquity, is yet spoken of in the books as a method of treatment. This method arose out of ignorance as to the true nature of fistula. Now that it is better understood, cauterization should be entirely rejected. It exposes patients to severe pain, serious inflammation, and a

loss of substance most prejudicial to the function of the sphincters, and may also occasion dangerous hemorrhage.

The ligature, as ancient as cauterization, has been by turns abandoned and revived, and, although not without its advantages, is now rarely employed. In fact, when the fistula is complicated with sinuses and callosities, and its external opening at a considerable distance from the anus, the ligature is insufficient and should be rejected.

Whether the origin of excision, or extirpation of fistulas be ancient or modern, it is a method which should be banished from the the domain of art, as one of the most cruel operations in surgery. It occasions great loss of substance to the sphincters and lower portion of the rectum, and is followed by profuse hemorrhages, which risk the life of the patient from the difficulty and frequent impossibility of arresting them.

Incision, which is as ancient as the other methods, is in most general use, and was habitually employed by Sabatier. That celebrated surgeon performed the operation in the following manner:

He first applied a T bandage, and placed the patient upon the edge of the bed, as in operating for abscess of the fundament. He then introduced a thin, flexible grooved director into the external orifice, passing, at the same time, a finger into the anus. When the end of the director reached the walls of the rectum, Sabatier sought for the internal opening of the fistula, and having found it, brought out the director by the anus. He then passed the point of a bistoury along the groove and divided the fistula from one end to the other. The incision accomplished, he dressed the wound with a piece of lint introduced between the lips, and covered the whole with lint and light compresses, which were sustained by the T bandage.

The introduction of lint between the lips of the wound was, according to Sabatier, one of the most important parts of the operation. He insisted that if this was not attended to, there was cause to fear that the wound would unite too early, and leave the fistula uncured. The succeeding dressings were to be made in the same way. The dressing is certainly of some moment in the treatment of fistula, nevertheless, I have seen

unmanageable patients, who would not allow the lint to remain in the wound, but who were cured notwithstanding.

Baron Larrey at first adopted Desault's operation for fistula in ano, but after a very extensive practice, and frequent opportunities of observation, he was satisfied that in almost every case the internal opening was to be found near the anus. He was not slow in throwing upon this subject the powerful light with which he illuminated so many points of surgery, and he reduced the instrumental part of the operation to a straight bistoury, as Sabatier had done. He replaced the common sound with a grooved director, blunted and flexible like that of the syringotome, which rendered the process extremely easy, and brought the operation to perfection.

After all that has been said, it appears evident that fistula is ordinarily a disease of little importance, and easily cured. The time when it was regarded as one of the most serious of maladies, and the operation as one of the most cruel and dangerous, has happily passed away. How contemptible those courtiers of Louis XIV. appear who affected a desire of being cut for fistula, in order to commend themselves to the monarch, who was himself unfortunately the subject of the same disease! According to Dionis, many of these personages were greatly annoyed when told that it was unnecessary in their case. "This disease," says Mad. de Sevigne, "was called the '*Maladie du Roi*,' and became the fashion. It was considered *bon ton* to be affected with it; every one wished to be operated on, and many were so, without cause. Dangeau was too prudent a courtier not to conform to the prevailing fashion. He also had the *maladie du Roi*, and submitted to an operation."

According to the Journal of the Marquis of Dangeau, it was on Monday, November 18, 1687, at seven o'clock in the morning that Louis XIV. was operated upon. Dionis informs us that he recompensed like a king all his medical attendants. He gave to Felix, his first surgeon, who performed the operation, 50,000 crowns; to Daquin, 100,000 livres; to Fagon, 80,000 livres; to Bessieres, 40,000 livres; four apothecaries had each 12,000 livres, and to Rage, a pupil of Felix, he gave 400 pistoles. Never was the cure of so trifling a disease, and so easy an operation, so magnificently rewarded.

The following notes, relating to this subject, seem too remarkable to be omitted here:

"John Ardern, an English surgeon, who lived in Newark from 1349 to 1370, and thence removed to London, has left a manuscript work upon Medicine and Surgery, containing a treatise on Fistula in Ano, which was the only one which had been printed, when it appeared, in 1588. Few surgeons had spoken of the operation for fistula since Albucasis and William de Salicet. The preference which the former gave to the actual cautery over the ligature, when the operation was necessary, had been more than sufficient to deter patients from exposing themselves to it. The latter had proposed a means less cruel; he advised the ligature, but his practice had been so little followed, that at the time of Ardern, there was no one who could treat fistula with success. As for him, he decided upon incision or the ligature, according to circumstances. It seems that this operation had contributed to his fortune, which he advanced no less by the precautions which he took to secure his fees, than by the operation achieved by his skill. He advised physicians and surgeons to set the cure of fistula at as high a price as possible, and to make sure of payment by a contract in proper form. Nor is this conduct of Ardern to be condemned, since he but conformed to the customs of his time. He made so little secret of the matter as to report some examples of the price demanded by him for the operation, of which the following is one:

"*Centum Marcas* (*a nobili*), *vol. XI. libras cum robis et fiodis—et centum solidos per annum ad terminam vitæ.*"

Finally, fistula in ano is a disease of frequent occurrence, especially among persons affected with hemorrhoids. Many are doubtless the subjects of fistula which are cured spontaneously. In most cases there is nothing either in the disease or the operation to cause uneasiness or alarm.

I am of the opinion that the observations which I have reported, and the nature of the facts contained in this memoir, have need of nothing but the power of reason to convince every one that fistula in ano need be a subject of no serious concern, either to those who have it, or to the physician who is called upon to treat it.

Note.—This concludes the memoir of M. Ribes. I have already collected and compared the opinions of a vast number of medical writers upon the expediency of operating for fistula in consumptives, and may at some future time publish them.

D. W. YANDELL.

Editorial Department.

THE AMERICAN MEDICAL ASSOCIATION.

Under the above heading, in our last number, there appeared a few remarks upon the subject indicated—over which our cotemporary of the Chicago Medical Examiner, Dr. N. S. Davis, Professor of Principles and Practice of Medicine and Clinical Medicine in the Medical Department of Lind University, father of the American Medical Association, &c., &c., &c., waxeth wroth and sayeth many things which he ought not to say, and with characteristic literary libertinism quotes from the "Louisville Monthly Medical Newes," in a spirit of "independance," and then explodes thus:

"The American Medical Association.—Under this caption, we find in the *Louisville Monthly Medical Newes*, for November, which has just reached us, an editorial article which closes with the following paragraph:

'The meeting at Chicago, we fear, will be thinly attended. There will doubtless be an excitingly amusing time with the solons of the Garden City, in reference to the next President.

'We suppose that even now there is log-rolling and wire-pulling, and feasting, in anticipation of who are to constitute the nominating committee, and who is to be its chairman; for that fact ascertained, who will be President? becomes a foregone conclusion. There are two schools there, and judging from the tone of their respective organs, we would suspect that each had a candidate in the field, for they are playing at cut and thrust, in any other than a christian spirit. We would recommend them to be calm, and beat their swords into ploughshares. There is excitement enough over Illinois Presidents.'

"We doubt whether another paragraph can be found in print, containing as many false assumptions and unjust intimations, as the above.

"1st. It assumes that both of the Medical Journals published in this city are *organs* of the respective Medical Colleges. We take occasion to say that the Chicago Medical Examiner is as perfectly independant of all medical colleges as any other journal published in America.

"2d. It assumes that the two journals are 'playing at cut and thrust, in any other than a *christian spirit*.' We would

like to have the editor of the Louisville News substantiate this by a single line of proof. This assertion would lead his readers to suppose that the Journals and Schools here were engaged in a bitter and *unchristian* controversy; whereas nothing could be farther from the truth. There is not a line to be found in this Journal for the last six months, which alludes to the Rush Medical College, except in terms of friendship and respect. And on the other side, until its last issue in December, 1860, the Chicago Medical Journal, the organ of Rush Medical College, had not so much as informed its readers that the Medical Department of Lind University was in existence.

"3d. It assumes that each college has its candidate for the next Presidency of the Association; which is simply an assumption without a shadow of proof.

"4th. It assumes that these candidates and their friends are already "*log-rolling*" and "*wire-pulling*" to get the next nominating committee properly arranged. Now we assure the editor of the Louisville Medical News, and all other friends of the American Medical Association, that these assumptions concerning the next President of the Association, are not only unqualifiedly false, but unjust to the whole profession of this city and state. It is well known that the senior editor of this Journal, and a large majority of the profession, both of this city and state, are strongly opposed to the custom of confining the selection of President to the place of meeting. So true is this, that the Illinois State Medical Society, at its last annual meeting, passed resolutions, almost unanimously, condemning the practice, and instructing its delegates to use all honorable means to break it up, and to establish the practice of electing all the officers with reference to their fitness, without regard to localities. There are two organized Medical Societies in this city, each holding meetings once a month; and although we have attended nearly all the meetings of both, we have never yet heard the subject of the next presidency of the Association alluded to in either. Our *confrere* at Louisville, and the members of the Association everywhere, may have their minds at perfect ease about "log-rolling" and every other species of strife among the profession in this city. We invited the association to meet here, not for the evanescent honors of its highest office, but for the glorious privilege of receiving its members at our own firesides, of extending to them the same generous hospitality that we have had extended to us in so many other cities, and of permitting them to see, here in the Garden City itself, one of the most striking illustrations of the energy and activity of the age in which we live, that can be found on the continent.

"We cordially invite the members and friends of the Asso-

ciation, in every section of the country, in the East, the West, the South, and the North, to honor us with their presence.

"We hope that neither political dissensions nor sectional prejudice will deter any from coming up to our annual greeting. We shall look for none with more anxiety, and we are certain that none will receive a more cordial welcome, than those with whom we have so often met from Charleston, Richmond, Baltimore, New Orleans, Nashville, Louisville, and other cities of the South. Come on, friends, from all sections; come by hundreds, for we have ample halls, capacious hotels, broad prairies, beautiful lakes, and a generous people. Give us a full meeting, a free interchange of sentiments for the advancement of the noblest and most humane of professions, and the happy privilege of serving you to the best of our ability, and you may confer your Presidential honors on whomsoever you may deem most *worthy*, without the slightest regard to locality, and we will guarantee that the profession of Chicago will be satisfied."

A more amusing tirade of nonsensical bosh seldom finds its way even into such periodicals as the Chicago Medical Examiner. The editor has been considered a prominent candidate for the faded honors of the Presidency of the American Medical Association, but as he has so generously left the field, Dr. Brainard will undoubtedly be elected without opposition, for who could withstand the hospitality of "ample halls, capacious hotels, broad prairies, beautiful lakes, and a generous people?" Who would be so ungrateful as to leave such enchanting delights without the usual acknowledgment? Notwithstanding the generous statement of the Father of the Association, that "we invited the Association to meet here, not for the evanescent honors of its highest office," who would withhold these evanescent honors so modestly declined (or anticipated, as you may construe the expression)? Surely no one could be so ungrateful.

We propose to follow the erudite editor, and reply to his objections to our assumptions:

The first objection is to the use of the term "organ," as applied to the immaculate Examiner. The term was not used in an opprobrious sense: and since the statement is made that the "Chicago Medical Examiner is as perfectly independent of all Medical Colleges as any other journal published in America," we are bound to accept it, and admit that possibly it is entirely "independant" of school influence; and candor

demands the admission that the editor's orthography is certainly an argument in favor of the justice of the denial. We trust, therefore, that as regards the first proposition, Dr. Davis will accept our apology. In justification, or at least palliation, however, we desire to offer a few reasons for making the statement which has been so sternly resented.

The first is, that Lind University is the Alpha and Omega of the Examiner's editorials, and every thing pertaining thereto is lauded in unmeasured terms, whilst Rush Medical College is subjected to slurs and direct charges,—e. g.: "To such students as are desirous of skimming over all the branches, or more properly, of following the lecturers over a part of each branch for sixteen weeks, without thoroughly reviewing any, the Rush Medical College affords as strong inducements as any similarly organized school in the country."—(Sept. No.) Our second is, that the Examiner came into existence as a sequence of the Lind University, and that Dr. Davis is the reputed masculine parent of both. Our last is, that if it were not true, the gentleman would not be so foolishly sensitive on the subject. Having erred, however, we again tender him our apology.

The second proposition is rather laughable, or we should say, laugh-at-able. We are called upon defiantly to "substantiate by a single line of proof," that the two journals are playing at cut and thrust in any other than a christian spirit. Now, we do not know that we will succeed, because, first, there may be a wide difference of opinion in reference to what constitutes a christian spirit. Some might argue that it evinced a christian spirit, having been smitten on one cheek, to turn the other also. Another might argue that it evinced a christian spirit to take a scourge of small cords and whip intruders. Besides which, we have not a file of Dr. Davis' invaluable journal, and perhaps may have taken wrong views of a difficulty touching an institution called Mercy Hospital; but certainly our recollection of the criminations and recriminations which grew out of that difficulty, leaves upon our mind the impression that charges which in some latitudes would be deemed very serious, were made on both sides, and in language as unmistakeable as it was undignified. But we will not trust memory, and say that these charges evinced an unchristian spirit on either side. There are a few copies of the Examiner before us, and at random we will examine them.

The first that meets our eye is the March No. 1860. The leading editorial is of course upon the subject of Lind University. This occupies about seven pages. The second article is upon the same subject, The third is upon the "Annual Meeting of the Illinois State Medical Society." This is a rich one. The editor, speaking of the resolutions to be offered, and to which he has directed our attention—which resolutions had reference to the mode of electing the officers of the American Medical Association, and instructing the Illinois delegation to effect, if possible, a change, as he suggests—uses this language: "We call particular attention to these resolutions at this time, because our neighbor of the Chicago Medical Journal has two or three times alluded to them as proposing action disrespectful to the profession of New Haven, where the American Medical Association is to hold its next meeting, and at the same time he has carefully abstained from publishing the resolutions, so that his readers might judge for themselves. Such a course is not only contemptible in itself, but manifestly unjust to the members of our own State Society."

In reference to this very action of Dr. Davis, hear what Dr. Brainard says in the April No. of the Chicago Medical Journal, p. 247:

"The Illinois State Medical Society and the National Association.—At the last meeting of the Illinois State Medical Society a movement was made, looking to *reform* in the manner of electing the President of the National Association. A resolution relating to this matter was introduced, as was understood, at the instance of Dr. N. S. Davis, but did not pass. At present the Association has the right of choosing its officers from any part of the Union, although for obvious and proper reasons the Presidents have most frequently been taken from the State in which the meeting was held. Dr. Davis proposes to make a rule prohibiting such choice, and disfranchising the members of the profession in the particular State or city in which the meeting may be held, and urges his friends to rally and put it through.

"This is an ingenious move. In the first place it might make his chances of election better at New Haven than they were at Washington and at Louisville, where he did not succeed. Secondly, if the Association should ever meet in this State it would prevent the election of any other person. If this resolution passes, the next move may be to invite the Association to Chicago, otherwise not.

"It is melancholy to see so much attention paid to an unimportant matter, to the neglect of the scientific interests of the State and National Societies. But it is in accordance with the peculiar system of elevating the profession advocated in a certain set just at present."

But to return to the March No. of the Examiner.

Its 4th ed. article is upon the "Annual Commencement of Rush Medical College," hitting at the address of Dr. Brainard and the diminished class of his school. The 5th article is again upon the old theme, Lind University. The 6th article is upon "A Question of Ethics," in which Dr. Brainard is charged with a breach of etiquette, and almost directly with mal-practice also. The 7th article commences thus: "In the Chicago Medical Journal for June last, among other misrepresentations, the editor stated," &c.

Now we submit that the March No. contains enough to justify us in all we have, in our innocence of heart, charged and written. But as there remains another No. before us, we will examine it.

We take up the February No. 1860. Herein we have information of the ejection of one of the editors from the clinique of Prof. Brainard, or at least of what some ridiculously sensitive person might consider tantamount to an ejection—the note reading thus:

"Dr. STEELE,—No person is allowed in this clinique except members of the class and invited persons. D. BRAINARD."

This note seems to have been received in a Christian spirit, and the remarks upon it are very lamb-like.

But the presumption of Dr. Davis is as excessive as his "independance," for in the very number which contains his silly commentaries upon the texts which we offered him, and in the very next article succeeding his paradoxes, we find him hammering away at Dr. Brainard again, and naming him, and alluding to some charges not necessary to be copied. He says: "Instead of characterizing each and all of these charges as wholly gratuitous and false, as we might do with perfect propriety, we will simply submit the following statement of facts," &c.

What does Dr. Davis mean by terms of friendship and respect? Does he mean that he has not spoken of the bricks and mortar as the Rush Medical College? If so, we will not

say that he has spoken disrespectfully of the building. But if he does not seek so paltry a subterfuge, we would really like to know what he means by "friendship and respect," and we would still further like to know what his ideas of truth are.

Now, Dr. Davis, a word or two of plain language in your ear: You assure us that our "assumptions are not only unqualifiedly false, but unjust to the whole profession of this city and State." Of course we can not take exceptions to such a statement, because our veracity is not impugned, but our judgment; nevertheless we say to you that such language is not courteous: it is susceptible of misconstruction, and should not be used by any gentleman. When you charge Dr. Brainard with falsehood, you are at liberty to do so, and between ye be the issue; but your style of controversy is unsuited to the tastes of others, and may some day lead you into difficulty.

TO DELINQUENT SUBSCRIBERS.

Gentlemen, your kindness has been our ruin—your favors, our destruction—your smiles, our tears—your approval, our bankruptcy. How rejoiced you must be when you read this our epitaph, and with your Havanna curling its grateful clouds above you, thank God that you yet outlive the storm. We envy not the digestion of your next meal; but were it shingle nails and crab cider, it should lie more easily upon your stomach, than the consciousness of your injustice, upon your memory.

TO SUBSCRIBERS NOT IN ARREARS.

Gentlemen, we desire to thank you for your promptitude, and express our deep regret that your numbers had not been greater.

TO OUR EXCHANGES.

The courtesy and delicacy which have marked your intercourse with us, will ever be remembered with great gratification:—no cloud has dimmed its brightness; and save a black spot in the East, and a vapor in the West, our sky has been as clear as hope could have wished, or the most sanguine could have dared to anticipate.

Our deepest regret, in doffing the editorial robes, is the loss which we shall most keenly feel in your absence.

We learn that one or two medical journals will soon make their appearance in this city. We have the report concerning one, from reliable authority. We wish them success.